

# Introductions

Friday, December 22, 2023 1:40 PM

Azure Costs ID: [dcheema1@optumcloud.com](mailto:dcheema1@optumcloud.com)

OIS IT Operations Data Services <OISITOperationsDataServices@ds.uhc.com>

HCC team: [chad.brovold@optum.com](mailto:chad.brovold@optum.com)

BladeBridge:

Github repo:

<https://github.com/bladebridge/optum-pilot02>

HCP Data Catalog: [HCP Data Catalog Governance, Online Whiteboard for Visual Collaboration \(miro.com\)](#)

DWaaS:

[docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/engagement\\_overview](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/engagement_overview)

Optum Tech Chargeback: <https://docs.hcp.uhg.com/cost-management/chargebackdetails#azure-subscription-estimate>

Azure Optum: [https://portal.azure.com/#@uhgazure.onmicrosoft.com/blade/Microsoft\\_Azure\\_CostManagement/](https://portal.azure.com/#@uhgazure.onmicrosoft.com/blade/Microsoft_Azure_CostManagement/)

User Id\Pwd: dcheema1@optumcloud.com\ToasterIs13YearsOld

Before you do anything, you need to activate PIM: [https://portal.azure.com/?feature.msalis=true#view/Microsoft\\_Azure\\_PIMCommon/CommonMenuBlade/~/quickStart/defaultMenuId/mvroles/provider/azurerbac](https://portal.azure.com/?feature.msalis=true#view/Microsoft_Azure_PIMCommon/CommonMenuBlade/~/quickStart/defaultMenuId/mvroles/provider/azurerbac)

Click on **Activate role**

My roles - Azure resources

Privileged Identity Management | Azure resources

[Refresh](#) [Open in mobile](#) [Got feedback?](#)

[Eligible assignments](#) [Active assignments](#) [Expired assignments](#)

Search by role or resource						
Role	Resource	Resource type	Membership	Condition	End time	Action
Contributor	ISDC	Subscription	Group	None	Permanent	Activate
Contributor	SDC_PRD0	Subscription	Group	None	Permanent	Activate

Click on **Activate**, under Action, on the far right.

Now you would be able to access Cost Management/Cost Analysis.

Master Data List (ISDW+DEEP).xlsx: [https://uhgazure.sharepoint.com/:r/sites/MRIS-OASFileShare/Shared%20Documents/General/MRIS%202024%20Modernization%20Program/01%20Data%20Procurement/03%20Requirements,%20Development%20Specs/MRIS%20System%20Data%20Sources%20Due%20Diligence/Master%20Data%20List%20\(ISDW+DEEP\).xlsx?d=w24bdee8965b045e2a09411f8fb3e0356&csf=1&web=1&e=ZqbOV3](https://uhgazure.sharepoint.com/:r/sites/MRIS-OASFileShare/Shared%20Documents/General/MRIS%202024%20Modernization%20Program/01%20Data%20Procurement/03%20Requirements,%20Development%20Specs/MRIS%20System%20Data%20Sources%20Due%20Diligence/Master%20Data%20List%20(ISDW+DEEP).xlsx?d=w24bdee8965b045e2a09411f8fb3e0356&csf=1&web=1&e=ZqbOV3)

Master Data List (ISDW+DEEP).xlsx: [https://uhgazure.sharepoint.com/:r/sites/MRIS-OASFileShare/Shared%20Documents/General/MRIS%202024%20Modernization%20Program/01%20Data%20Procurement/03%20Requirements,%20Development%20Specs/MRIS%20System%20Data%20Sources%20Due%20Diligence/Master%20Data%20List%20\(ISDW+DEEP\).xlsx?d=w24bdee8965b045e2a09411f8fb3e0356&csf=1&web=1&e=AVCtHc](https://uhgazure.sharepoint.com/:r/sites/MRIS-OASFileShare/Shared%20Documents/General/MRIS%202024%20Modernization%20Program/01%20Data%20Procurement/03%20Requirements,%20Development%20Specs/MRIS%20System%20Data%20Sources%20Due%20Diligence/Master%20Data%20List%20(ISDW+DEEP).xlsx?d=w24bdee8965b045e2a09411f8fb3e0356&csf=1&web=1&e=AVCtHc)

Snowflake URLs : [Worksheet - \[COPY 1\] COMPAS Billing \(1/1\) in 793ms - Done \(snowflakecomputing.com\)](#)

<https://uhgdwaas.east-us-2.azure.snowflakecomputing.com/console/login#/>

[https://uhgazure.sharepoint.com/:f/r/teams/MRIS-OASFileShare/Shared%20Documents/General/MRIS%20Documents/ISDW\\_ODS/EDP-Implementation/DDL/src\\_edi\\_837?csf=1&web=1&e=cnaNmf](https://uhgazure.sharepoint.com/:f/r/teams/MRIS-OASFileShare/Shared%20Documents/General/MRIS%20Documents/ISDW_ODS/EDP-Implementation/DDL/src_edi_837?csf=1&web=1&e=cnaNmf)

#### SharePoint URLs:

<https://uhgazure.sharepoint.com/teams/MRIS-OASFileShare/Shared%20Documents/Forms/AllItems.aspx?FolderCTID=0x0120006073E219D914C045B1B9609ED6B7DB16&id=%2Fteams%2FMRIS%20Documents%2FShared%20Documents%2FGeneral%20Documents&viewid=739191ee%2D8e7e%2D4c98%2D9367%2D5bb512d69adb>

#### Team Channel: MRIS System Data Sources Due Diligence;

Teams Channel: OAS-MRIS 2024 Modernization Program

**Branching Strategy recording:** [https://uhgazure-my.sharepoint.com/:v/g/personal/john\\_shin\\_optum\\_com/Edg6M0zcbDRCIUMJ2QQ1LDgBdfwtT8LpGBi4ataDZJO4A?referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view](https://uhgazure-my.sharepoint.com/:v/g/personal/john_shin_optum_com/Edg6M0zcbDRCIUMJ2QQ1LDgBdfwtT8LpGBi4ataDZJO4A?referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view)

**Implement Role Based and Fine Grain Access Controls on Snowflake:** [https://uhgazure-my.sharepoint.com/:v/g/personal/john\\_shin\\_optum\\_com/EW5Bbf0jg8RLIKjdnpWeYQBNFmw981tVrXzNnkMAUoW4g?referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view](https://uhgazure-my.sharepoint.com/:v/g/personal/john_shin_optum_com/EW5Bbf0jg8RLIKjdnpWeYQBNFmw981tVrXzNnkMAUoW4g?referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view)

<https://uhgazure.sharepoint.com/teams/MRIS-OASFileShare/Shared%20Documents/Forms/AllItems.aspx?csf=1&web=1>  
&e=A4sn4E&xsd=MDV8MDJ8fD2kZiA2MTYwNi05NzQ3MTjhMzQ0MDhkYzA2NDM1YTFnGRIuMDVmYWNYhzgYTRiOWRiOWM1MGY2NGI2NzU1NDlxDB8MHw2Mzg0OTlxMzM1MiQzNjYxNDh8VW5rbm93bnxWR1ZoYlhOVFpXTiFjbWwwZVZObgNuWnBZMIY4ZXIKV0lqb2INQzR3TgpBd01EQWIMQ0pRSWpvaVYybHVNeKlpTENKOIRpSTJzakwYUdWeUlpd2lWMVFpT2pFeGZRPT18MXxMMk5vWVhSekx6RTVPakZTmpleFl6bG1MVGRqTnpBdE5EY3lOaTA1WkdSaUxXUxhOak5ctTRiNE9UTm1PVjg2WmpVeptUTROQzBSWVRNMFxUUmzbUV0WVRsak5pMhdobVxpNE16TTVOREZBZFc1eExtZGliQzV6Y0dGalpYTZx1Z6yZjGbIpYTXZNVGNTXpZeE5qVTFNakExT1E9PXxjMTE4NDFmZDQzQG0ZGEwYTM0NDA4ZGMwNjQzNWExZnw52jU5ZWZjM2lyMGY0NjBYTFhZGQ3YTUXOTFIMzjhZg%3D%3D&sdata=eEZj0o2RTBOYzhZQU5sc2JvMzh3RXldihPVU9lchF2R1RNWNuCKzLMD0%3D&overuser=db05fac4%2Dc82a%2D4b9d%2Db9c5%2D0f64b6755421%2Csandeep%2Epalla%40optum%2Ecom&OR=Teams%2DHL&CT=1703702395380&clickparams=ev1BcHBOYWlIijoiVGvhbXMTRGVza3RvcCisikFwcFZlcnNpb24iOiiyNy8VmExMDlvNDcwNSisikhcoZlZGVyyXKRIZFVzZXliOmzhHNifQ%3D%3D&cid=8cc24961%2D89d3%2D4ce6%2Da45c%2D00a9a42909c1&RootFolder=%2Fteams%2FMRIS%2DOASFileShare%2FShared%20Documents%2FGeneral%2FMRIS%20Documents%2FISDW%2FDOD%2FEDP%2DImplementation%2FEDP%20Extracts%20Source%20Code&FolderCTID=0x0120006073E219D914C045B1B9609ED6B7DB16">https://uhgazure.sharepoint.com/teams/MRIS-OASFileShare/Shared%20Documents/Forms/AllItems.aspx?csf=1&web=1

Base: <https://uhgazure.sharepoint.com/teams/MRIS-OASFileShare/Shared%20Documents/Forms/AllItems.aspx>

Current state code [MRIS-OAS Collaboration - EDP Extracts Source Code - All Documents \(sharepoint.com\)](#)

**System Access Requirements:** <https://uhgazure.sharepoint.com/:f/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements?csf=1&web=1&e=2gDp8>

DEEP: <https://uhgazure.sharepoint.com/:f/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements/DEEP?csf=1&web=1&e=guqxJQ>

ISDW/ODS: <https://uhgazure.sharepoint.com/:f/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements/ISDW?csf=1&web=1&e=guqxJQ>

SMART: <https://uhgazure.sharepoint.com/:f/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements/SMART?csf=1&web=1&e=elkgG4>

My SharePoint: : [NYAPD](#)

#### Dev Environment:

UNIX HOST: rn000057812 (rn000057812.uhc.com)

HIVE URL: jdbc:hive2://rn000057812:10498/default

#### Prod Environment:

HIVE URL: jdbc:hive2://rp000062313.uhc.com:10428/default

Unix HOST: rp000062313(rp000062313.uhc.com)

**echo \$PATH:** /opt/mapr/java/current/bin:/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/opt/mapr/spark/spark/bin

Add your files path to the Path: export PATH="/home/dcheema/migration\_scripts:\$PATH"

**JQ utility:** /mapr/datalake/optum/optuminsight/t\_dlz/tst/developer/jq

Best practice: move personal shell scripts into the /usr/local/bin directory:

sudo mv hello /usr/local/bin

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**Prod Azcopy:** /mapr/datalake/optum/optuminsight/p\_dlz/prd/developer/azcopy/azcopy\_linux\_amd64\_10.14.1/azcopy

**Prod JQ:** /mapr/datalake/optum/optuminsight/p\_dlz/prd/developer/jq/jq

ROLE: AZU\_DWS\_ISDC\_DEV\_SYS\_ADMIN\_ROLE

**TWS** is the starting point.

**MRIS GitHub:** <https://github.com/uhc-mris/isdc>; <https://github.com/uhc-mris>;

EDP\_FWA\_TAXONOMY\_MISMATCH\_LOAD

EDP-NYAPD-PLAN

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**Oracle Database credentials:**

Dev ISWDV01(Host: ed08-scan01, service: iswdv01svc.uhc.com)

ISWDV02(Host: ed08-scan01, service: iswdv02svc.uhc.com)

ISWDV03(Host: ed08-scan01, service: iswdv03svc.uhc.com)

**Prod:** ISWPR01(Host: ep26-scan01, service: iswpr01svc.uhc.com)

These Roles will give provide Read Access:

**These Roles will give provide Read Access:**

CONNECT, UHG\_SELECT\_CATALOG\_ROLE, APPLICATION\_RO

In Dev/Test, if you need write access, please request for UHG\_DEVELOPER\_ROLE

User Id: UHG\_001617529

Oracle User ID: UHG\_001617529

ISWDV01 Initial Password: Toaster2010!

Oracle User ID: UHG\_001617529

ISWDV02 Initial Password: Toaster2010!

Oracle User ID: UHG\_001617529

ISWDV03 Initial Password: Toaster2010!

\*\*\*\*\*  
NAS Drive to store output: /etldata/isw03/isdc/outbox

Project folder: /etldata/isw03/isdc/outbox/historical\_data\_migration\_oracle/exec

\*\*\*\*\*  
**Historical Data Migration Snowflake credentials:**

URL: <https://uhgdwaas.east-us-2.azure.snowflakecomputing.com/console/login#/>

account: 'uhgdwaas.east-us-2.azure'

user: 'isdc\_dev\_dw@optum.com'

password: 'L9G8G8cTJF4zYZ'

Role: AZU\_DWS\_ISDC\_DEV\_SYS\_ADMIN\_ROLE

Warehouse: ISDC\_DEV\_ETL\_XS\_WH

Database: ISDC\_DEV\_DW\_DB

Schema: SRC\_ISDW

stagename: @isdw\_dev\_stage/archive\_test

\*\*\*\*\*  
Snowflake Prod:

account: 'uhgdwaas.east-us-2.azure'

user: 'isdc\_prd\_dw@optum.com'

password: 'jCq1pqh3VX88cF9'

private\_key: pkb

role: 'AZU\_SDRPUBLIA\_PRD\_DEVELOPER\_ROLE'

warehouse: 'UBLIA\_PRD\_WORK\_XS\_WH'

database: 'UBLIA\_PRD\_ISDC\_PRD\_DB'

\*\*\*\*\*  
**Prod Oracle credentials:**

oracle:

db: 'ISDW'

db\_username: 'UHG\_001617529'

db\_password: '3j+1b=4CHS@'

db\_hostName: 'ep26-scan01'

db\_service\_name: 'iswpr01svc.uhc.com'

db\_port: '1521'

maxBatchSize: 100000

\*\*\*\*\*  
Snowflake Storage Tenancy model recommended:

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/configuration#warehouse-file](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/configuration#warehouse-file)

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

To fix the DBeaver Network error as shown below:



Follow the steps shown below to fix it:

1. On your DBeaver menu bar click **windows > preferences**.
2. Add <https://repo1.uhc.com/artifactory/repo> to thedbeaver settings (Connections --> Drivers --> Maven) as shown below.
3. Move it to the top >
4. Apply and close.



5. Open DBeaver again.
6. Click on Test Connection and it will prompt you to download the driver. Click on Download.
7. After Download is completed and installed, setup connection properties such as, Host, Service Name, Username, Password, etc.
8. Click on Test Connection. It should connect successfully.

**DEEP DUR info:**

Hi All,

DEEP team would not be able to join the call today. Please let me know if any information is required from our end.

**DUR 183** Modernization Migration to Snowflake Cloud – was approved by Legal 12/12/2023

It includes Source data from : EDP, ISDW, DEEP, SMART, 837 Raw, COMPAS and Fox Claims to Target: EDP Cloud (MS Azure Cloud). Two EIS Risk Review #'s were referenced: MS Corp & MS Azure (Cloud) 22722323 & Snowflake 22974559

**DUR 117** Cross-Product Attribution in MDP – was also approved 12/24/2023 for the Target: EDP Cloud (MS Azure Cloud) and references the same two EIS Risk Review #'s

Both DUR's cross reference:

Optum's DUR [400687](#) EDP Modernization

**USE ONLY DUR 183, NOTHING ELSE**

[11:55 AM] Bangale, Gaurav

[uhg-internal/DQM-data-migration2snowflake \(github.com\)](#)

[11:56 AM] Bangale, Gaurav

[snowflake python \(2\).zip](#)

**HCC team:** [chad.brovold@optum.com](#)

**HCP - Health care platform:** [https://hcp.uhg.com/](#)

**Strategic Data Repository Platform (SDRP):** [https://docs.hcp.uhg.com/united-query-interface/strategic-data-repository-platform-\(sdrp\)](#)

[https://orbitbi-tableau.optum.com/#/site/DataAnalytics/views/MetadataDashboard-DEEPPROD/RoleDescription?&iid=1](#)

Kornshell Python execute last command: fc -s

# Meetings

Sunday, February 4, 2024 4:52 PM

Meeting 02/1/2024 with Verma and Steve  
Subject: DMExpress conversion, onboarding

- MRIS Steve Schlotzhauer
- Any way to get metadata to the way code is written out
- Access to DMExpress
- 95% are one task only
- 50+ DMExpress jobs. Some are replicated and duplicated
- 100s DMExpress jobs
- Steve & Verma to explore conversion possibilities
- Steve to get number of jobs

## Meeting with process owners

Details to access  
ISDW ODS - Ranjith and Arjun - Oracle, UNIX  
DEEP - Aditi, Garvit and nitesh will provide access  
SMARTS - Verma, and Anil Prasad

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Meeting 02/05/2024

Subject: Conversion of DMExpress jobs to ADF  
100 - 150 packages to migrate  
Level and percentage of conversion  
DMExpress version?  
# of DMExpress jobs 100-150  
DMExpress (SyncSort)

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ISDW-ODS and DEEP

Technologies: Oracle/Exadata, DB2, MSSQL, ECG, NAS (files)

COMPAS ==> Exadata, Fin360, CI Data, APEX, OCSS, Federal programs

DEEP is HADOOP based

SMART - on 3 boxes - DB2 server, application server, IBM AIX DB2

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meeting 02/06/2024 MRIS Data Procurement

Subject: Daily stand-up

Access requests for ISDW and DEEP

Start of ISDW data sources for procurement

Define cloud based solution patterns

First two sprints will of PI planning

Data sources for each platform, MRIS SMEs

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02/06/2024 - Working session - Data Procurement

Subject: working session - Data procurement

Aditi will be on client side

Arjun - will work on MRIS behalf; he will be the point person

Start with analyze existing systems and data sources

Work on platform side

Followed by development and testing

Identify additional data sources

Work divided in to CDC and batch processing

Arjun claims and ODS

CDC - Tarlan, to work with Arjun (COMPAS, FOX), specifically PowerExchange. Provide list of tables by tomorrow

PowerExchange need to be evaluated for interaction with Snowflake

Work with Admins to setup connections - work with Sreenadha Sarisirala

Look and review HCP CDC tool

Batch data sources

Look at the list and retrofit it

Swetalkumar Rajendrakumar Brahmbhatt, Ranjith will be point persons for this effort. Arjun can also help. Will provide list by 2/09/2024

For DEEP, Aditi will also work on this - Raw zone

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Meeting 2/6/2024 MRIS Modernization OAS Connect

Subject: status update

Complete access request

Santosh and Dave to setup containers and folders

Automate CI/CD

Get into the details of the batch framework

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Meeting 2/28/2024 with John, Sandeep, and Harish

Subject: Data Procurement Framework

- Historical data load to be handled
- Data is sitting in ISDW and DEEP
- Start looking at how data needs to be pulled in
- Talk to MRIS on how to migrate historical data
- Pulling data from Hive
- There is a data leakage using Azcopy
- Talk to DBPaaS admin why that is happening
- ISDW pull history data

Meeting 03/1/2024 with Ranjith

Subject: Historical data migration

Historical data migration of data from the ISDW and DEEP data warehouses how best to approach it, leverage any existing patterns and sequence/precedence in which they should be migrated

ETL\_SCHEMA table should be migrated as well

Meeting 03/11/2024 - Roles in Exadata

- No roles defined for business
- ISDW has several roles
- There is a matrix available somewhere - Brian to share the Excel
- Data modelers and Felix define roles
- Security is implemented at table level, not column level
- These roles get synced to Secure roles for Exadata
- SMART team only has a couple of roles; they are working on it
- ISDW and ODS - Brian, Doug, Gurlaiz, Andrew, Joe M., Sree, Felix
- DEEP - Aditi, Nitesh, Gurtej, Felix
- SMART - Verma, Andrea
- EDP - Sheharyar,
- The current ask is for the downstream consumer teams
- Lay out how these roles will be enabled on Snowflake
- We will lay out the solution as to how it will be implemented.
- Brian to share the ISDW role Excel file

Meeting 03/13/2024 MRIS Modernization: OAS connect

Subject: Access Control

Roles based Access

If you need access Roles from various groups

Create separate meetings

Put a call for tomorrow with John, Sandeep, and Santosh

How are we

Meeting 03/21/2024 with Vaibhav and John S.

Subject: Code conversion using CodeXchange

Work with Verma and Ranjith to get the code

Work with Vaibhav at CodeXchange to see what can be done

Get stored procedures and DDLs from SMART and ISDW

Test out POC on DB2 stored procs

Shell scripts how they can be supported

**Verma responded on 03/25/2024:**

There is a folder called Product Request in teams channel. You'll find everything that you need in this folder.



[product\\_request](#)

Bhandeo, Vaibhav6:19 AM

Wanted to understand what are these \*.dxt files are for

DMExpress is ETL software (\*.dxt). The dxt scripts are created by DMExpress. You need to have DMExpress installed on your laptop to view these scripts, is that readily available on Appstore, let check

These scripts connect to COMPAS, ISDW ACES,.

These scripts connect to COMPAS, ISDW ACES, SMART databases to extract data. Also do transformations to the data.

The tool is available so I can have it checked... The tool is available so I can have it checked and analyzed

1. Once I have DMExpress would need some help

2. Once I have DMExpress would need some help to setup it to read those scripts

who can help there?

No problem. We'll have someone assist you.

Meeting 04/11/2024 with Kiran and Doug

Subject: Liv's security concerns

Liv's security awareness:

Liv - we follow right process. What is the level of security we're at from Microsoft.

Consolidate SDRP offering and HCC/HCC folks offerings

Formalize into slide deck

review with SDRP and HCC team

Review with MRIS leadership

Reach out to SDRP and HCC what they have from security stand point

Level of guidelines from Azure and Snowflake

Meeting 05/16/2024 with OAS Core team

The purpose of this meeting is to cover the following items:

- Create a pristine list of data tables to be migrated.

- Clearly mark what needs to be migrated for Historical data migration.

- Identify any additional workloads to be migrated using Data Migration Python utility, e.g., > tables bigger than 50M rows.

- Identify/Create target schemas and tables and who is going to be creating what?

In production - is infra ready? What about the credentials?

DC - to Sree to ask about infra.

27th take staggard report. we should be ready to load fox

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# V2 Tenant to Storage Tenant Migration

Monday, July 8, 2024 10:52 PM

## Version 01 07/1024

### End-to-End V2 Tenant to Storage Tenant Migration

#### Scope

- Permissions to access source (V2 Tenant) and target (Storage Tenant) environments - data objects in-scope and be able to reference the target (Storage tenant) environment information schema
- Permissions to access HCP console to create resource group, database, schema, data products, and container roles
- List & describe migration activities & features

#### Permissions

- Ensure proper permissions to EDP V2 tenant and Storage tenant environments
- Functional role Developer permissions to HCP Console

#### Migration

Create scripts (in V2 tenant) to create/clone object types(table, views, file formats and stored procedures from schemas in-scope:

LZ\_COMPAS  
LZ\_EDI\_837  
LZ\_FOX  
LZ\_ISDW  
SRC\_COMPAS  
SRC\_EDGE\_837  
SRC\_FOX  
SRC\_ISDW  
UTIL

Execute create/clone statements (in the storage tenant, in the like-database and like-schema) in the target environment:

LZ\_COMPAS  
LZ\_EDI\_837  
LZ\_FOX  
LZ\_ISDW  
SRC\_COMPAS  
SRC\_EDGE\_837  
SRC\_FOX  
SRC\_ISDW  
UTIL

#### Stored Procedures (*suggestion*)

- A stored procedure to generate scripts to be executed in the storage tenancy
- A stored procedure to execute scripts in the storage tenancy

#### Execute scripts

- Execute stored procedure to generate create/clone statements (in the source environment)
- Validate create/clone statements
- Execute create/clone statements (in the target environment)
- Validate migration results

#### Prod Migration

- Modify both procedures to point to the prod environment
- Create stored procedure to generate scripts to be executed in the storage tenancy in the V2 tenancy in the prod environment
- Create stored procedure to execute scripts in the storage tenancy
- Execute the stored procedure in the V2 tenancy in the prod environment to create/clone source objects
- Execute the other stored procedure in the storage tenancy prod environment to create/clone objects in the target environment

#### Validate results

#### Prepare Data products

- Application owner Create/select an AIDE id
- Owner create an intake (in Aha!) request
- Create a resource group under the application (AIDE)
- Create a tenant with SDRP's assistance in the resource group. Storage tenants are provisioned with three functional roles (Developer, Analyst, and Support) per environment
- Create Snowflake roles using appropriate functional roles, e.g., AZU\_SDRP\_{TENANT PREFIX}\_{ENV}\_ANALYST\_ROLE for persona Data Analyst
- Add members to resource group (Developers, Analysts, Support) in the appropriate role(s)
- Owner creates Multiple logical environments (e.g., DEV, TST, STG, SIT, PRD)
- Owner create a database to contain application data in HCP console
- Owner create one or more schema(s), warehouses and resource monitors
- Dev. team creates tables, views and other constructs to contain data
- Create and register data products (only to be exposed)

#### Identify, define, and create Row Level Security (RLS) and Column Level Security (CLS) policies

- Identify all PII, sensitive and protected data
- Define unique set of row/column level protection policies
- Create a policy table
- Enter column name to PHI/PII/other sensitive data mapping in the policy table
- Implement the policy (using stored procedures)
- Map roles to the policies
- Use alter commands to create above defined protection policies
- Create container roles in HCP Console and SECURE, e.g., AZU\_SDRP\_{TENANT PREFIX}\_{ENV}\_{NAME}\_CN\_RL
- Validate data products, policies and container roles

#### Identify and update existing processes, such as, ETL, replication, etc. to point to the new (Storage Tenancy) environment

Create data products in HCP console. Note: be sure to follow the [Data Product Readiness Checklist](#)

Review current storage/design architecture and make recommendations for the Storage Tenancy model

- Assess current V2 tenant and recommend improved data organization

Create plan to go live

Communicate go live plan

Go live

End users visit the Data Catalog and subscribe to data product

Data Product owner approves access

To access sensitive data, user make request in SECURE to a specific container(s) to meet his/her use case needs

Data Product owner reviews the request and approves access

Resource Groups (Platform Resource manager) to segregate tenancies into containers

Tenants created in one group has no visibility into tenants deployed in other groups

- Can provision multiple resource groups into and ALIDE id
- each resource group can contain multiple storage tenants
- customers manage their own resource groups

Schema types contain data in various stages of lifecycle

Use medallion architecture - Bronze, Silver, and Gold layers. Schema types Raw - original/unprocessed data; Target - refined intermediate data; Access - final data for end user consumption

Access to schemas is governed by three persona roles - Developer, Analyst, and Support

Developer - Read/write access to all types of schema

Analyst - Read-only access to final schemas

Support - Troubleshoot and validate data quality

Container roles - not preconfigured, instead, tenant's users define the scope and meaning. They are created in HCP console. They are used in row access policies and column masking policies to validate if data should be visible for a subset of users.

**SDRP Intake process:** [Intake Overview - Public Cloud | HCP Docs \(uhg.com\)](#)

HCP Data Platform Teams Channel: [HCP Data Platform User Group](#) | [Data Catalog Support](#) | [Microsoft Teams](#)

RE: How to track my data production approval request



Hey Dave – see inline responses below

**From:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>  
**Sent:** Friday, July 19, 2024 12:42 PM  
**To:** Koy, Kate <[katlyn.koy@uhc.com](mailto:katlyn.koy@uhc.com)>; Nair, Rajesh G <[rajesh.nair10@optum.com](mailto:rajesh.nair10@optum.com)>  
**Cc:** Nowak, Bobbie-Jean <[bobbie-jean.nowak@optum.com](mailto:bobbie-jean.nowak@optum.com)>  
**Subject:** RE: How to track my data production approval request

Thank you, Kate. As you know, we're just starting out and there will a lot of questions. Who do we go to for those questions? At current, I have the following questions:

- Once we submit our data product request, it seems to stay stuck in Pending Approval status. Is there anything we can do to expedite it? Also, do all those group owners in the approvers list have to approve a product?

With My Data > Data Products > Select the status hyperlink:

The screenshot shows the 'My Data' section of the Data Catalog. It lists three categories: Business Owners, Technical Owners, and Tier 1 Governance, each with a status of 'Pending' and a count of '0 of 1'. The status is represented by a small icon with a red dot.

- Should we have the same name product name in all environments? If yes, how do we distinguish a product from one environment to another, e.g., product name: MRIS-Billing. It is the same name in DEV and Prod. How will I be able to select the MRIS-Billing from the right environment?

The Data Product name has to be unique. For our catalog data products, we just amended the non-prod data product name to include stage at the end of the name. You have full freedom to name the product as needed – take into consideration how consumers know and would possibly search for the data. When creating the data product, you can filter the datasets by environment, this will also display in the dataset table within the product.

Reach out if you have more questions or feel free to connect in chat or by phone. Thanks!

Please be mindful that we're up against a very aggressive timeline and attending office hours is not an option for us. Any assistance you can provide will be greatly appreciated. Thank you.

Regards,  
Dave Cheema

**From:** Koy, Kate <[katlyn.koy@uhc.com](mailto:katlyn.koy@uhc.com)>  
**Sent:** Friday, July 19, 2024 9:41 AM  
**To:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Nair, Rajesh G <[rajesh.nair10@optum.com](mailto:rajesh.nair10@optum.com)>  
**Cc:** Nowak, Bobbie-Jean <[bobbie-jean.nowak@optum.com](mailto:bobbie-jean.nowak@optum.com)>

**From:** Koy, Kate <[katlyn.koy@uhc.com](mailto:katlyn.koy@uhc.com)>  
**Sent:** Friday, July 19, 2024 9:41 AM  
**To:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Nair, Rajesh G <[rajesh.nair10@optum.com](mailto:rajesh.nair10@optum.com)>  
**Cc:** Nowak, Bobbie-Jean <[bobbie-jean.nowak@optum.com](mailto:bobbie-jean.nowak@optum.com)>  
**Subject:** RE: How to track my data production approval request

Hi Dave – You'll want to include yourself as an Owner going forward if you want to continue to manage the subscription post submission.

I added you as a second tech data steward. [HCP Data Catalog \(uhg.com\)](#)

Kate

---

**From:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>  
**Sent:** Friday, July 19, 2024 9:03 AM  
**To:** Nair, Rajesh G <[rajesh.nair10@optum.com](mailto:rajesh.nair10@optum.com)>; Koy, Kate <[katlyn.koy@uhc.com](mailto:katlyn.koy@uhc.com)>  
**Subject:** How to track my data production approval request

Rajesh, Kate,

I have created a pilot data product and then submitted it for approval. Now I cannot track where it is and who is it with. Is there any way for me to track it? BTW, the product name starts with: DAVE CHEEMA... This is a test data product to document the end-to-end process of subscribing a data product in detail.

Please don't hesitate to contact me if you have any questions/concerns. Thank you.

Regards,  
Dave Cheema

---

[Saturday 3:53 PM] Nowak, Bobbie-Jean  
<https://docs.hcp.uhg.com/data-catalog/contact-us>

[Saturday 4:01 PM] Nowak, Bobbie-Jean  
<https://docs.hcp.uhg.com/data-catalog/data-product-subscription>

[Saturday 4:05 PM] Nowak, Bobbie-Jean  
<https://data.hcp.uhg.com/domains>

## EDP V2 Tenant to Storage Tenant Migration

Tuesday, June 25, 2024 9:04 AM

----- CLONE OBJECT FROM V2 Tenancy to Storage Tenancy -----

```
USE SECONDARY ROLES ALL;  
USE ROLE AR_PRD_ISDC_PRD_DW_OPTUM_ROLE;  
  
Create or replace table UTIL.dc_test(  
    ID INT,  
    first_name varchar,  
    last_name varchar  
);  
  
Insert into UTIL.dc_test Select 1, 'Dave', 'Cheema';  
Insert into UTIL.dc_test Select 2, 'John', 'Doe';  
Insert into UTIL.dc_test Select 3, 'Mickey', 'Mouse';  
  
select * from ISDC_PRD_DW_DB.UTIL.dc_test;
```

```
USE ROLE AZU_SDRP_UBLIA_PRD_DEVELOPER_ROLE;  
  
CREATE TABLE UBLIA_PRD_ISDC_PRD_DB.UTIL.DC_TEST  
CLONE ISDC_PRD_DW_DB.UTIL.DC_TEST;  
  
select * from UBLIA_PRD_ISDC_PRD_DB.UTIL.DC_TEST;
```

```
Drop table UBLIA_PRD_ISDC_PRD_DB.UTIL.DC_TEST;  
Drop table ISDC_PRD_DW_DB.UTIL.DC_TEST;
```

+++++  
**Getting started:** An application owner ("owner") creates or determines an existing AIDE to use for their storage tenant

1. Owner opens an [Aha! intake request](#) and provides details of their use case
2. Owner creates a new [resource group](#) under their [application](#) and grants access to their team members
3. The SDRP team sets up a tenant in HCP Console on the owner's behalf
4. Owner goes to HCP Console and navigates to the Strategic Data Repository Platform product, and clicks on Manage
5. Owner creates a new database to contain their data application
6. Owner creates one or more schemas, warehouses and resource monitors under their data application
7. Application team creates tables, views and other Snowflake constructs to populate their data application directly in Snowflake

## Resource Groups

A resource group is a PRM (Platform Resource Manager) that allows application owners to segregate their tenancies into logical containers.

Tenants deployed in one resource group have no visibility into tenants deployed in other resource groups.

How to manage them in the [Account Manager documentation](#).

Storage tenant principles:

- Teams may provision **multiple resource groups** per AIDE application
- **Each resource group is allowed to contain multiple storage tenants**
- **Customers are responsible for managing access to their resource groups**

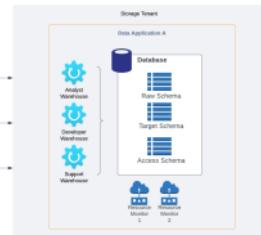
+++++  
Schema types are intended to clearly designate and contain data in various stages of lifecycle. Storage tenants are encouraged to design data applications by how their data will be loaded, processed and prepared for consumption - medallion architecture as bronze (raw), silver (target) and gold (access) layers.

Schema Type	Use Case
Raw	Original data, unprocessed and usually loaded from a source system
Target	Refined datasets built from raw data; intermediate data used in later pipelines
Access	Final (gold) datasets intended for consumer use

Access to schemas is governed by three persona roles: developer, support and analyst.

Persona	Level of Access	Use Cases
Analyst	Read-only access to final schemas	Consumes the final data product
Developer	Read/write to all types of schemas	Builds data pipelines, catalog and metadata
Support	Read access to most schemas	Troubleshoots and validates data application quality

Warehouses may also be provisioned to provide compute capacity, along with resource monitors to track and better manage credit usage in Snowflake.



## Environments

Application owners create several, logical "environments" in their storage tenancies.

An **environment** is a grouping of objects, such as databases, warehouses and schemas.

They are designated by three-letter acronyms. A dropdown will be available to choose which environment the object should belong to. Tenants may utilize all available environments.

No enforcement of its usage purpose. However, below are the guidelines suggest how tenants may leverage them.

Environment	Acronym	Purpose
Development	DEV	Development work and other scratch data needs
Testing	TST	QA or higher-level data quality assurance
Staging	STG	Pre-production or release candidate datasets
Integration Testing	SIT	Datasets intended for testing across systems
Production	PRD	Production-grade data

## Snowflake Roles

Storage tenants are provisioned with **three, distinct functional roles per environment** that grant varying permissions to different Snowflake objects. These roles are granted to **personas** based on their job function and level of involvement.

Naming convention includes the name of the storage tenant and a three-letter acronym for the environment.

Role	Persona	Description
AZU_SDRP_{TENANT PREFIX}_{ENV}_ANALYST_ROLE	Data analyst/scientist	Provides read-only access to objects
AZU_SDRP_{TENANT PREFIX}_{ENV}_DEVELOPER_ROLE	Software/systems engineer	Provides read/write access to most objects

Administrators may deploy **container roles**. A container role is a Snowflake role that does **not come preconfigured** with any particular permissions, and instead allows the tenant's users to define their scope and meaning. **Container roles are created via HCP Console**, and follow a similar naming convention:

- AZU\_SDRP\_{TENANT PREFIX}\_{ENV}\_{NAME}\_CN\_RL

Container roles are typically used as membership lists to check if a particular Snowflake user belongs to a role or not. These roles can then be used in row access policies and column masking policies to validate if data should be visible for a subset of users.

All of these roles are created in Secure, which allows tenants to control who can access and manage their Snowflake objects.

```
=====
4
5 uhg_dwaas -- SDRP
6
7     V2+ - Dev/test/Stage/prod
8
9     Storage - Test/Stage/Prod
10
11
12 uhg-uhg_dwaasnonprod
13
14
15     Storage - Dev
16
=====
```

The screenshot shows the Data Catalog interface for the SRC\_COMPAS entity. The URL is https://data.hcp.uhg.com/container/urn:li:container:300abeb84d451ab25c4f722516076d4b/Entities?is\_lineage\_mode=false&page=1&unionType=0. The page displays the entity details for SRC\_COMPAS, which has 11 entities. It includes sections for Entities, Documentation, Properties, Filters, and Share. The Entity section shows two sub-sections: BILLING\_DALLAS and BILLING\_EFTAUTH, each with undefined owners and a single owner listed (Majorossy, Edward). There are also sections for About, Owners, Tags, and Glossary Terms.

**SRC\_COMPAS**

11 entities

**Entities**   **Documentation**   **Properties**

**Filters**   **Share**   **Filter container entitie...**

**BILLING\_DALLAS**

Defined   Undefined | UHGWM110-017761

**BILLING\_EFTAUTH**

Defined   Undefined | UHGWM110-017761

**About**

No documentation yet. Share your knowledge by adding documentation and links to helpful resources.

**Owners**

No owners added yet. Adding owners helps you keep track of who is responsible for this data.

**Tags**

No tags added yet. Tag entities to help make them more discoverable and call out their most important attributes.

**Glossary Terms**

# Multi-Storage Tenancy Model

Tuesday, July 16, 2024 2:50 PM

## Re: Explore Multi storage tenancy model



Shin, John S

To ● Cheema, Dave; ● Thokala, Santhosh; ● Palla, Sandeep; ● Bangale, Gaurav; ● Sahoo, Asit K

Retention Policy UHGIinbox (90 days)

Expires 10/14/2024

ⓘ You replied to this message on 7/16/2024 10:30 AM.

Tue 7/16/2024 10:04 AM



Hi Dave, Asit & Santhosh,

Could you guys do some work on the side and develop an approach for MRIS where we would have multiple Storage Tenants to use as a discussion point with MRIS leadership in the near future?

Some things to include in the consideration:

- Data Procurement as a Storage Tenant
  - o Publish Data Products based on Source
- ISDW, ODS, SMART, EDP, and DEEP could be separate Storage Tenants
  - o EDP could combine into ISDW or remain separate
  - o Publish Data Products based on BDR schemas OR by logical data domain
- Alternatively, combine ISDW, ODS, EDP, and SMART into storage tenant for Integrated Data and have DEEP be a storage tenant for Data Science & Analytics data
  - o Publish Data Products based on physical schemas
  - OR
  - by logical data domain which might group data as Claim, Membership, Campaign, RX, etc

Please review drafts with Sandeep and Gaurav to identify what it would take to execute on (pivot over to) this approach.

@Cheema, Dave Dave – please take point to drive this as a side item for the team.

Thanks,

---

**John Shin** (he/him)

Sr. Director Cloud Data Engineering & Solutions | Optum Advisory | Optum

O 1-952-833-7266  
M 1-612-321-6400  
[john.shin@optum.com](mailto:john.shin@optum.com)

12125 Technology Drive  
Eden Prairie, MN 55344

**Optum**

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---

**From:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>

**Date:** Tuesday, July 16, 2024 at 9:33 AM

**To:** Thokala, Santhosh <[santhosh\\_thokala@optum.com](mailto:santhosh_thokala@optum.com)>, Palla, Sandeep <[sandeep.palla@optum.com](mailto:sandeep.palla@optum.com)>, Bangale, Gaurav <[gaurav.bangale@optum.com](mailto:gaurav.bangale@optum.com)>, Sahoo, Asit K <[asit.sahoo@optum.com](mailto:asit.sahoo@optum.com)>

**Cc:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>, Nair, Rajesh G <[rajesh.nair10@optum.com](mailto:rajesh.nair10@optum.com)>

**Subject:** RE: Explore Multi storage tenancy model

Santosh,

These good notes. Thanks.

Regards,

Dave Cheema

---

**From:** Thokala, Santhosh <[santhosh\\_thokala@optum.com](mailto:santhosh_thokala@optum.com)>

Dave Cheema

---

**From:** Thokala, Santhosh <[santhosh\\_thokala@optum.com](mailto:santhosh_thokala@optum.com)>

**Sent:** Tuesday, July 16, 2024 9:20 AM

**To:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Palla, Sandeep <[sandeep.palla@optum.com](mailto:sandeep.palla@optum.com)>; Bangale, Gaurav <[gaurav.bangale@optum.com](mailto:gaurav.bangale@optum.com)>; Sahoo, Asit K <[asit\\_sahoo@optum.com](mailto:asit_sahoo@optum.com)>

**Cc:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Nair, Rajesh G <[rajesh.nair10@optum.com](mailto:rajesh.nair10@optum.com)>

**Subject:** Explore Multi storage tenancy model

Hi All,

FYI, meeting notes of yesterday's call for exploring Multi Storage Tenancy Model,

**Points to consider:**

Depends on complexity and how many Data applications being supported,

If we have multiple dev teams, then it would make sense to have multiple tenants,

**Pros:**

Custom roles on Tenant level allows more isolated access to Data Objects,

Cost is reported at the Tenant level. SDRP reports at the tenant level,

Data products can be designed based on consumption patterns.

**Cons:**

If we split existing Tenant, we'll have to migrate data between tenants,

To create a separate tenant, it would require a couple of days.

Thank you,

Santhosh Thokala

OI Advisory and Implementation

## Notes

Thursday, January 4, 2024 1:34 PM

**PRM** - Platform Resource Manager

To run the job in the background and produce lots of messages:

```
/eimdata/isdc/historical_data_migration/oracle/exec  
nohup python3 appMain.py > ../../common/logs/background_test.log 2>1 &
```

**ADF SHIR Maximum parallel executions per node** = 8 (4 \* cores for nodes w/ up to 2 cores and 2 \* cores for bigger nodes, but it can still be increased by raising a support ticket)

[12:50 PM] Bangale, Gaurav

FIELD\_DELIMITER=' '

[12:53 PM] Bangale, Gaurav

[Microsoft Azure](#)

Microsoft Azure

ISDC\_Blob\_URL: <https://saisdcnonprod.blob.core.windows.net/isdc>

Create historical data load and work with Harish

Use Gaurav's POC, copy into command

**DB2 contact list:**

SMART IT Ops Team: OIS IT Operations SMART <OISITOperationsSMART\_DL@ds.uhc.com>  
Igor Ridkodim, Anil Prasad

On 05/02/2024

- Historical data load from the Edge node - Need Gaurav's help

- Doing refresh DB2 a different way 0 using Sqoop and ADF - 05/02/2024

I tried your settings but nothing changes. With just a file of 1GB file to transfer, the Azcopy tool already gives up and terminate immediately the process. Crazy thing is that no significant log is provided.. :|  
- [coding89238](#) May 24, 2023 at 13:51

solved: the process was being killed by the OS (OOM killer). I solved by adjusting --block-size-mb (in line parameter) and AZCOPY\_CONCURRENCY\_VALUE (session variable) - [coding99](#) May 24, 2023 at 15:29

--block-size-mb (float) Use this block size (specified in MiB) when uploading to Azure Storage, and downloading from Azure Storage. The default value is automatically calculated based on file size. Decimal fractions are allowed (For example: 0.25). When uploading or downloading, the maximum allowed block size is 0.75 \* AZCOPY\_BUFFER\_SIZE\_GB. To learn more, see [Optimize memory use](#).

```
--block-size-mb=15000  
export AZCOPY_BUFFER_SIZE_GB=20
```

All 10 table files: 13.12 GB  
inst\_claim\_part: 7.39 GB  
inst\_clm\_sv\_dates: 1.44 GiB  
inst\_patient: 110.90 MiB  
inst\_payer\_part: 328.31 MiB  
inst\_provider\_all: 3.44 GiB  
inst\_provider\_part: 51.62 MiB  
inst\_receiver\_part: 145.67 MiB  
inst\_submitter\_part: 196.62 MiB  
inst\_subscriber\_part: 50.58 MiB

AZCopy --include-after certain date/time: azcopy copy 'C:\myDirectory\\*' '[--include-after \(string\) Include only those files modified on or after the given date/time. The value should be in ISO8601 format. If no time zone is specified, the value is assumed to be in the local timezone of the machine running AzCopy. E.g., 2020-08-19T15:04:00Z for a UTC time, or 2020-08-19 for midnight \(00:00\) in the local timezone. As of AzCopy 10.5, this flag applies only to files, not folders, so folder properties won't be copied when using this flag with --preserve-smb-info or --preserve-smb-permissions.](https://mystorageaccount.file.core.windows.net/myfileshare?sv=2018-03-28&ss=bfqt&srt=sco&sp=rw&lacup&se=2019-07-04T05:30:08Z&st=2019-07-03T21:30:08Z&spr=https&sig=CAfhgnc9gdGktvB=sk7bAiglddM845viyFwdlMH481QA8%3D' --include-after '2020-08-19T15:04:00Z' --preserve-smb-permissions=true --preserve-smb-info=true</p></div><div data-bbox=)

Total Inventory Includes following:

- DMExpress Tasks = 1400
- Syncsort Jobs = 758
- SQL Scripts = 2304
- Shell Scripts = 1693

Benefits of MRIS Modernization: [https://uhgazure-my.sharepoint.com/:w/personal/joy\\_jones\\_optum\\_com/Documents/Homedir/My%20Documents/Documentation/1-Communications/CDO/valuestories/Win%20Template.docx?d=w2a507ef1ba1458c8b9d55b6108edb38&csf=1&web=1&e=CQXtCX](https://uhgazure-my.sharepoint.com/:w/personal/joy_jones_optum_com/Documents/Homedir/My%20Documents/Documentation/1-Communications/CDO/valuestories/Win%20Template.docx?d=w2a507ef1ba1458c8b9d55b6108edb38&csf=1&web=1&e=CQXtCX)

Informatica, Snowflake ODBC speed: <https://community.snowflake.com/s/question/0D50Z00008SOskBSAT/odbc-data-inserting-speed>

StreamSets: [https://quickstarts.snowflake.com/guide/cdc\\_data\\_from\\_oracle\\_to\\_snowflake\\_in\\_streamsets/index.html?index=%2Findex#0](https://quickstarts.snowflake.com/guide/cdc_data_from_oracle_to_snowflake_in_streamsets/index.html?index=%2Findex#0)  
<https://docs.streamsets.com/>

Oracle CDC client ->

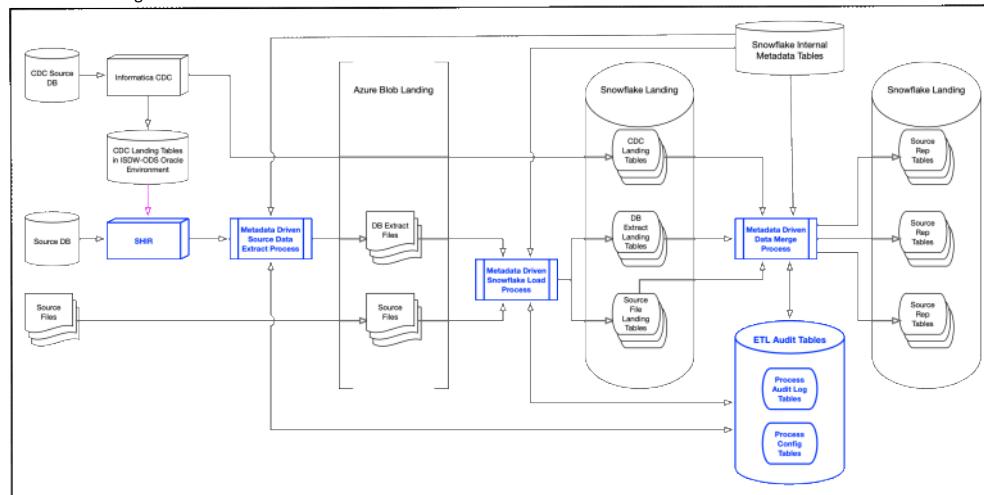
YouTube: <https://www.youtube.com/watch?v=B-6SSnR0nhw>

Source CDC -> Informatica Exchange -> Informatica PowerCenter --> file --> Azure Blob storage -> Snowflake Copy

Source CDC -> Informatica Exchange -> Informatica PowerCenter --> SQL Server --> ADF Azure Blob storage --> Snowflake Copy

Team please take a look at this and consider for discussion in OAS Connect call later:

- **Metadata Driven Source Data Extract Process:** extracts data from source tables as defined in the **Process Config Tables** in **ETL Audit Tables**
  - this process could potentially be used to pull data from **CDC Landing Tables** in **ISDW-ODS Oracle Environment** if **Informatica CDC** can't be used to write directly to **CDC Landing Tables** in **Snowflake**
- **Metadata Driven Snowflake Load Process:** loads data files that are available in Azure Blob storage as defined in the **Process Config Tables** in **ETL Audit Tables**
- **Metadata Driven Data Merge Process:** merges data that has been landed in source landing tables in Snowflake as defined in the **Process Config Tables** in **ETL Audit Tables**
  - target table's column data type could be retrieved from **Snowflake Internal Metadata Tables**
- **SHIR:** configure connections to source databases so data can be extracted



Cheema, Dave Can you please reach out to EIS and HCC and see if there are any reverberations from the Change Health Care hacks that we need to watch out for? I.E new security policies and protocols that we have to implement

[10:21 AM] Shin, John S

Everyone Please log your hours to the correct task in OpenAir. See team roster for reference. Let me know if you have questions.

- Mudit, Santhosh, and Dave should be splitting time across Procurement and Replication
- Veera put time under BI Remediation task
- Everyone else to either Procurement OR Replication based on which you are marked (X) for.

<https://uhgazure.sharepoint.com/:x/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/MRIS%202024%20Modernization%20Program%20-%20Team%20Roster.xlsx?d=w8d4fc9765545d74992fa47a452d626b&csf=1&web=1&e=qfb0zR>  
MRIS 2024 Modernization Program - Team Roster.xlsx

#### Four classifications for data:

Public - freely accessible to the public

Internal-only - data is strictly accessible to internal company personnel or employees

Confidential - data requires specific authorization and/or clearance to access ,e., g., Social Security numbers, cardholder data

Restricted - data, if compromised or accessed without authorization, could lead to criminal charges, massive legal fines or cause irreparable damage to a company

MRIS Modernization 2024 data migration - scope, plan and sequence

Send Update

Title:

Required:  Rajasekharan, Ranjith;  Boinpally, Harish;  Thokala, Santhosh

Optional:  Sharma, Mudit;  Palla, Sandeep;  Bangale, Gaurav;  Burke, Tim

Start time:  Tue 3/19/2024  9:30 AM  All day  Time zones

End time:  Tue 3/19/2024  10:00 AM  Make Recurring

Location: Microsoft Teams Meeting

RE: Optum/Impetus Conversion of DMExpress ETL

 Abhishek Nagohalli Lingaraju <abhishek.lingaraju@impetus.com>  
To:  Matthew Brown;  Sanjay Sharma;  Shin, John S;  Malhotra, Dinesh;  Palla, Sandeep;  Bangale, Gaurav;  Cheema, Dave;  Mike Patnode  
Retention Policy: UHGlinbox (90 days) Expires: 6/19/2024

**Caution: External email.** Do not open attachments or click on links if you do not recognize the sender.

Hi John,

Please find below location where u can upload/share the code base with us.

<https://expanse.impetus.com/s/6dWOWJ6w9c9M9Nj>

## RE: Optum/Impetus Conversion of DMExpress ETL



Abhishek Nagohalli Lingaraju <abhishek.lingaraju@impetus.com>

To: ○ Matthew Brown; ○ Sanjay Sharma; ● Shin, John S; ● Malhotra, Dinesh; ● Palla, Sandeep; ● Bangale, Gaurav; ● Cheema, Dave; ○ Mike Patnode

Retention Policy: UHGlinbox (90 days)

Expires: 6/19/2024

**Caution: External email.** Do not open attachments or click on links if you do not recognize the sender.

Hi John,

Please find below location where u can upload/share the code base with us.

<https://expanse.impetus.com/s/6dWQWJ6w9c9M9NJ>

Password: 79490p!u131

Thanks,  
Abhishek N L

+++++  
**To run python job and send messages to a log file:** python3 appMain.py > ../logs/appMain.log

nohup ./run\_historical\_migration.sh >/dev/null 2>&1 &

A working command: **nohup python script.py &, nohup python3 appMain.py &**

ps aux | more | grep appMain.py

grep --color=auto appMain.py

nohup python3 appMain.py &

nohup.out

tail -10 nohup.out

rm -rf nohup.out

free

ps -ef | grep nohup

head -10 nohup.out

++++++

Oracle Exadata team: [vladimir\\_adamsky@optum.com](mailto:vladimir_adamsky@optum.com)

++++++

command > log\_name.txt

++++++

Select count(\*) from ISDC\_DEV\_DW\_DB.SRC\_ISDW.INSURED\_PLAN\_PROFILE\_HISTORY

Truncate table ISDC\_DEV\_DW\_DB.SRC\_ISDW.INSURED\_PLAN\_PROFILE\_HISTORY;

LIST @isdw\_dev\_stage;  
REMOVE @isdw\_dev\_stage;

copy into @isdw\_dev\_stage/ISDC\_APPLICATION\_AGENT\_MainThread.csv.gz from (select \* from APPLICATION\_AGENT\_HISTORY) file\_format=(compression="gzip");  
COPY INTO ISDC\_DEV\_DW\_DB.SRC\_ISDW.APPLICATION\_AGENT\_HISTORY from @isdw\_dev\_stage/ISDC\_APPLICATION\_AGENT\_MainThread.csv.gz ON\_ERROR='CONTINUE';

++++++

Aditi Sankhla 3/26/2024 10:19 AM  
Hi Mudit,  
PFB details of SAS server.

**SAS fusion contacts:** amy.lamb@optum.com, Fin360\_infra\_DL@ds.uhc.com  
**Host :** sasfusion.uhc.com

For the access part on SAS, I would recommend to connect with the SAS team with the requirement, so they can suggest you the better way to raise the request for the required libraries rather than requesting for each library separately.

[ISDW\\_Historical\\_Data\\_Stats.xlsx](#)

**Run stats as of 04/01/2024:**

APPLICATION\_AGENT - 44,726 rows completed in 3 seconds

APPLICATION\_QUESTION - 1,503,378 rows completed in 20 seconds

ACCOUNT\_RECEIVABLE - 8,937,639 rows completed in :0-01:52.201949

INSURED\_PLAN\_PROFILE - INSURED\_PLAN\_PROFILE\_ID - 33,452,851 rows (50000 row chunks) - took 9:12 minutes.

All four tables combined took: 16:30 - 18:03 minutes.

and INSURED\_PLAN - 19556052 rows took 9:30 minutes

**Re: Request for SMART access control**



Kakarlapudi, Verma V

To: ○ Cheema, Dave

Cc: ○ Shin, John S

Retention Policy: UHGlinbox (90 days)



Expires: 7/4/2024

If there are problems with how this message is displayed, click here to view it in a web browser.

Start your reply all with: [Yes, I did.](#) [No, I did not.](#) [Yes, I was.](#) [Feedback](#)

Hi Dave,

Re: Request for SMART access control



Kakarlapudi, Verma V  
To: Cheema, Dave  
Cc: Shin, John S

Retention Policy: UHGIinbox (90 days)



Expires 7/4/2024

[\(i\) If there are problems with how this message is displayed, click here to view it in a web browser.](#)

Start your reply all with: [Yes, I did.](#) [No, I did not.](#) [Yes, I was.](#) [\(i\) Feedback](#)

Hi Dave,

Did you request it through Secure? Otherwise please follow the steps in the document below.

[How To - SMART Secure Request OSMMKTA SYSCAT.docx](#)

Once your access is approved you can use these connection details for DB2

[SMART DB2 Connecton Details.txt](#)

Thanks,

Verma V. Kakarlapudi  
UnitedHealth Group | UnitedHealthcare Medicare & Retirement  
680 Blair Mill Road | Horsham, PA 19044-2223  
215.902.9061

[Tuesday 1:36 PM] Shin, John S

Hi Rajesh - Important Question: We are in the middle of migrating on-premises MRIS data assets to SDRP with predefined scope and timelines. The migration from V2 to Storage Tenant has not been accounted for in the scope and timeline. The current migration goes up to the end of the year. We may not be able to stop work to do this transition from V2 to Storage Tenant. What are our options on this?

like 1

[Tuesday 1:38 PM] Cheema, Dave

**Shin, John S**

Hi Rajesh - Important Question: We are in the middle of migrating on-premises MRIS data assets to SDRP with predefined scope and timelines. The migration from V2 to Storage Tenant has not bee accounted for in the scope and timeline. The current migration goes up to the end of the year. We may not b...

A very good question. Thanks John.

[1:51 PM] Shin, John S

**Shin, John S**

Hi Rajesh - Important Question: We are in the middle of migrating on-premises MRIS data assets to SDRP with predefined scope and timelines. The migration from V2 to Storage Tenant has not bee accounted for in the scope and timeline. The current migration goes up to the end of the year. We may not b...

Nair, Rajesh G Can you please provide input on this?

[1:59 PM] Nair, Rajesh G

Hello John, Sorry about the delay in response.. Ideally you do not want your consumers to be impacted with a large change like this after you go live with them.. My hope would be that you could include this in your timelines so they don't have go through a breakup twice

\*\*\*\*\*

**Maximum number of threads can be created in a UNIX server:** cat /proc/sys/kernel/threads-max

\*\*\*\*\*

Hi Rajesh - Important Question: We are in the middle of migrating on-premises MRIS data assets to SDRP with predefined scope and timelines. The migration from V2 to Storage Tenant has not been accounted for in the scope and timeline. The current migration goes up to the end of the year. We may not be able to stop wor k to do this transition from V2 to Storage Tenant. **What are our options on this?**

\*\*\*\*\*

<https://app.snowflake.com/uhg/uhgdwaas/worksheets>

\*\*\*\*\*

**HealthCare Cloud team:** [chad.brovold@optum.com](mailto:chad.brovold@optum.com), Ibrahim, Atia B ([atia\\_ibrahim@optum.com](mailto:atia_ibrahim@optum.com))

\*\*\*\*\*

**DEEP Processes:** <https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING>

\*\*\*\*\*

**Data Catalog and products:** <https://data.hcp.uhg.com/data-forge>

\*\*\*\*\*

**John's guidance 04/17/2024:**

[9:08 PM] Shin, John S

Cheema, Dave For the MRIS Data Products to be defined to support end consumption, look to define the Data Products by data subject area - i.e. Professional Pre-adjudicated Medical Claims. Institutional Pre-adjudicated Medical Claims, Medical Claims (post adjudicated), Pharmacy Claims, Membership, Eligibility, Providers, Lab Data, etc. These are just illustrative examples, not the official data domains (subject areas) that are relevant for MRIS. You may be asking what are the subject areas relevant to MRIS? Well, you need to connect with the appropriate SMEs in MRIS for that? Who to connect with in MRIS for this? You may want to ask leaders like Doug, Kiran, and Dave for starters OR start with technical SMEs like Ranjith (ISDW-ODS), Verma (SMART), Gurtej & Aditi (DEEP), and Arjun & Prabhat (EDP). Why would it make sense to create data products by Data Domain? From my experience, data access is largely based on domain of data needed to support the analytic use case. You should probably discuss with appropriate MRIS SMEs.

You may want to consider doing a short POC for Data Products. Working with Brian Smith on creating data products for their team's needs would be a good option to start. You can partner with Veera who is/has working with Brian Smith for access to EDP data.

Schedule a call with appropriate folks on the project team if you want to talk through this some more.

Shin, John S:18 PM

Please **do your best to put together a "big picture"** are how all the different pieces come together to support end user consumption. Think about the key requirements for end -user consumption and how different features in data catalog and SDRP Snowflake can support those requirements... Requirements like limit access to domain of data (maybe even specific tables) the user needs for analysis, limit access to rows (records) and columns (masking) needed for analysis, allow users (within a user group) to create tables with a d-hoc data needed for analysis and analysis outputs, etc....

\*\*\*\*\*

**ADF Recommendations:** [Create a self-hosted integration runtime - Azure Data Factory & Azure Synapse | Microsoft Learn](#)

**SDRP Platform:** [SDRP - Strategic Data Repository Platform - Fine-Grained Security Architecture - All Documents \(sharepoint.com\)](#)

**DATETIME slices 2 hour example:**

```

WITH cts_dt AS
(
  SELECT DISTINCT trunc(CREATED_DATE) AS created_date FROM FOX_APP_ISDW.FF_PROF_CLM_837
)
,hour_blocks AS
(
  SELECT
    created_date + LEVEL * INTERVAL '2' HOUR AS block_start,
    created_date + (LEVEL + 1) * INTERVAL '2' HOUR - INTERVAL '1' SECOND AS block_end
  FROM cts_dt
  CONNECT BY LEVEL < 12 -- Adjust for 12 - 2 hour blocks in a DAY
)
SELECT TO_CHAR(startValue,'DD-MON-YYYY HH:MI:SS AM') startValue
,TO_CHAR(endValue,'DD-MON-YYYY HH:MI:SS AM') endValue
from
(
select
trunc(created_date) as startValue
,trunc(created_date)+INTERVAL '2' HOUR - INTERVAL '1' SECOND as endValue
from cts_dt
union
SELECT block_start AS startValue,block_end AS endValue FROM hour_blocks order by 1
);
SELECT /*+ PARALLEL(4) */ *
FROM FOX_APP_ISDW.FF_PROF_CLM_837 WHERE CREATED_DATE BETWEEN
TO_TIMESTAMP('{startValue}','DD-MON-YYYY HH:MI:SS AM')
AND TO_TIMESTAMP('{endValue}','DD-MON-YYYY HH:MI:SS AM');

```

**ISDW-ODS tables:**

SCHEMA_NAME	OBJECT_NAME	Counts	Historical Load using Python
FOX_APP_ISDW	ICD_CD	3,550,671,069	YES
FOX_APP_ISDW	CLH_837	2,101,057,349	YES
FOX_APP_ISDW	PROF_CHRG	2,727,158,568	YES
FOX_APP_ISDW	ORIG_BIL_PROV	671,120,216	YES
FOX_APP_ISDW	TIMEMB2_CLAIM2_NUM2	1,414,902,427	YES
FOX_Aud	AUD_EVTN_LOG	523,922,096	YES
FOX_Aud	AUD_EVTN_OBI_DTL	177,635,710	YES
FOX_APP	CLM_HIST	326,759,518	YES
FOX_APP	CLM_SBMT	164,684,771	YES
FOX_APP	CLM_EVNT	494,132,686	YES
FOX_APP	ACH_CLM_NBR	145,165,812	YES
FOX_APP	BIL_LN_HIST2	1,329,926,543	YES
FOX_APP	TCOMBINED2_CLAIM2	341,639,012	YES
FOX_APP	PAT_PARA2	482,472,606	YES
FOX_APP	CLM_INS_INFO	215,925,079	YES
FOX_APP_ISDW	OPREC_SHDW	483,419,563	YES
FOX_APP	CLAIMEVENT	661,165,946	YES
FOX_APP	CLAIM	164,452,501	YES

Source table	# of rows	Time to complete	Target table	# of rows
FF_PROF_CLM_837	162290645	00:37:15	FF_PROF_CLM_837	162290645
APPLICATION_QUESTION	1503378	00:00:25	APPLICATION_QUESTION	1503378
APPLICATION_AGENT	44726	00:00:04	APPLICATION_AGENT	44726
CLM_HIST	1020228531	09:57:04	CLM_HIST	1020228531

**Historical Data Migration guidance:**

Talk to Ed & Sree

ITOPS team  
 put a plan to schedule of ISDW and SMART  
 Share support ask of Sree  
 Timeline/schedule of the load schedule  
 Document what sort of permissions are required  
 Involve LOB DBA (Sojan & team)

Friday

Created deployment package  
 Sent it to ITOPS team  
 Now waiting for the deployment completion  
 Also, worked on creating the configurations for the remainder schemas and tables

Yesterday we had kicked off the Data Migration. But after two hours the job died and we are not seeing anything on our side. So we have asked the ITOPS to look into it from there side.  
 Asked them to cleanup the working folders and restart the job

And requested them to submit the job in the background so that the job does not end when there terminal end.

6/8/24 - COMPAS  
 6/11/24 - FOX\_APP  
 6/12/24 - DM  
 6/13/24 - Genesys  
 6/14/24 - SMART

Main Program Completed in :13:56:09.094244

TO\_CHAR(PROCESS\_DATE, 'YYYY-MM-DD HH24:MI:SS')

+++++  
Rithm School (SFO): Join Leading 17-Week Coding Bootcamp  
+++++  
UBLIA\_PRD\_ETL\_S\_WH is the warehouse to be used.  
CDP program - consulting development program  
OPTUM - technology development program 1 - 1.5 year program - TDP -

---

Warehouse: UBLIA\_PRD\_ETL\_S\_WH  
rp000124810.uhc.com  
Host: ep26-scan01  
Database: iswpr01svc.uhc.com

Thread name: "batch\_"+str(batchCount)+"\_"+str(currentStart)  
+++++

/u01/app/oracle/product/19.3.0.0/client\_1/lib/libclntsh.so  
+++++

**Oracle Database activity monitor:** <https://gptsupport.optum.com/>  
+++++

Two problems:

SQL parallel hint - end up starving other jobs  
Restart - currently the restart only starts from the beginning

Solutions:

SQL parallel hint - easy fix - remove parallel hint from SQL statements  
Restart -  
We already have a chunking framework that can chunk large workloads to any desired sizes  
Create a transient table  
At the start of the job, read transient table  
If no chunks are available to be processed, truncate the transient table and reload it using the above mentioned chunking framework  
Read next available chunk  
Process all rows within that chunk  
Mark (Update) the chunk as read  
Continue on to the next chunk  
+++++

Sandeep, please let me know when you have a minute to speak. What happened today was never meant to challenge your approach or to ignore your guidance. I knew you had mentioned, "**DO NOT execute any scripts**". But the challenge for me was, John wanted me to submit all jobs without waiting for the previous/current job(s) to complete. So that is why I submitted the next job. But, to honor your guidance of "DO NOT execute any scripts", I specifically mentioned, "**As soon as previously submitted Historical Data Migration jobs have been completed**" - which implied, do not run it until we get the go ahead from you and the previously submitted jobs are completed.

I hope that clears any misunderstanding and we can rise above it and move forward. We are all on the same team trying very hard to achieve the same objective - be successful in this project/endeavor. Thank you.

This looks like more of access related or Snowflake related issue Dave, Azure blob storage can store up to 190.7 TiB and we have only used up to 204.9GB.

This link might be helpful : <https://community.snowflake.com/s/article/error-oserror-errno-28-no-space-left-on-device>

<https://stackoverflow.com/questions/72243077/oserror28-no-space-left-on-device-error-in-snowflake-while-loading-big-file>

Name	Type	Environment	Tenant	Owner	Last Action
PROTECTEDTEST	COMMON	Development	DEV	<span style="color: red;">SN</span>	Success
ADMINTEST	COMMON	Development	DEV	<span style="color: red;">SN</span>	Success

[11:05 AM] Sahoo, Asit K  
[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

[11:09 AM] Thokala, Santhosh  
<https://console.hcp.uhg.com/dashboard/data-management/sdrp/containerRole>  
+++++

Name	Status
PROTECTEDTEST	Success

The screenshot shows a browser window with the URL [https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant). The page title is "Getting Started". The content includes a list of 8 steps for setting up a storage tenant with Snowflake objects. At the bottom, there is a section about Resource Groups and a footer with "Feedback" and "Support" buttons.

## Getting Started

To set up and populate a storage tenant with Snowflake objects, please follow the steps outlined below.

1. An application owner ("owner") creates or determines an existing AIDE to use for their storage tenant
2. Owner opens an [Aha! intake request](#) and provides details of their use case
3. Owner creates a new **resource group** under their application and grants access to their team members
4. The SDRP team sets up a tenant in HCP Console on the owner's behalf
5. Owner goes to HCP Console and navigates to the Strategic Data Repository Platform product, and clicks on Manage
6. Owner creates a new database to contain their data application
7. Owner creates one or more schemas, warehouses and resource monitors under their data application
8. Application team creates tables, views and other Snowflake constructs to populate their data application directly in Snowflake

Max 400 characters

Product Documentation More info ›

[object Object],[object Object]

## Overview

## Business Value Proposition / Justification

## Current Business Use cases

## Architecture

## Source System of Record

## Access Guide

## Data Freshness

Feedback Support

Register your data product

1 Description    2 Data & Use    3 Ownership & Alignment    ...

Datasets 

+ Select Dataset

DATA USE CATEGORIES

DATA USE CATEGORIES

Are there deidentification restrictions with the data in this Data Product?  Yes  No

[More info ▾](#)

[Feedback](#) [Support](#)

[11:05 AM] Sahoo, Asit K

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

[11:09 AM] Thokala, Santhosh

<https://console.hcp.uhg.com/dashboard/data-management/sdrp/containerRole>

[11:14 AM] Thokala, Santhosh

<https://uhgdwaas.east-us-2.azure.snowflakecomputing.com/console/login#/>

[11:16 AM] Sahoo, Asit K

<https://uhg-uhgdwaasnnonprod.snowflakecomputing.com/> -> Storage tenant Dev env.

<https://uhgdwaas.east-us-2.azure.snowflakecomputing.com/console/login#/> -> Test and prod storage tenant

[11:26 AM] Sahoo, Asit K

<https://data.hcp.uhg.com/data-forge/productRegistration/new>

You can log onto the Blade Bridge Partner Portal and licensing page with following credentials:

- User Name: [john.shin@optum.com](mailto:john.shin@optum.com)
- Password: OptumAdvisory

BB Partner portal: <https://community.bladebridge.com/>

BB Licensing Page: <https://partner.bladebridge.com/partner/converter/license/generate>

<https://bladebridge.teachable.com/courses/partner-onboard/lectures/45053260>

Can I share data between storage tenants?	Utilize secondary role (USE SECONDARY ROLE ALL) privileges to access data from a data product belonging to a different Storage tenant.
Can I automatically migrate my V2 tenants?	There is no automated process available today. Migrations would involve provisioning a storage tenant, creating Snowflake objects and manually loading your tables from your existing V2 tenants.

#### SDRP Data Product Cost/Billing is reported at AIDE ID and Tenant levels

Azure Optum Tech. rate card: [Chargeback, Showback & Rate Card - Public Cloud | HCP Docs \(uhg.com\)](https://Chargeback.Showback&RateCard.PublicCloud.HCPDocs.uhg.com)

Azure PIM Activate:

Role	Resource	Resource type	Membership	Condition	End time	Action
Contributor	ISDC	Subscription	Group	None	Permanent	Activate
Contributor	ISDC_PROD	Subscription	Group	None	Permanent	Activate

#### To browse Data Catalog by AIDE ID:

On the browse page:

- Select "type" filter of data product, then enter the respective app ID in the glossary terms filter [Finding Data - Data Catalog | HCP Docs \(uhg.com\)](https://Finding-Data-Data-Catalog-HCP-Docs.uhg.com)
- You can expand the glossary term section on the left side panel (data platform glossary, application ID) when you find the respective app ID, select it, and view the 'related entities' section. You can filter down to just data products

#### Tier 1 Governance response SLA: 2 business days

All required approvers get an automated e-mail notification from the Data Catalog when products or subscriptions hit their queue for approval. The SLA for Tier 1 review is 2 business days. These reviews will be prioritized in the order in which they are received.

#### Global Governance review

- Global Governance Review approval link: <https://uhg-eqrc.archerirm.us/default.aspx?IDP=cloud&requestUrl=.%2fGenericContent%2fRecord.aspx%3fid%3d26214040%26moduleId%3d735>
- This doesn't allow access to MA data. This was only for MS data access by offshore users
- Only pertains to work outside USA
- Group Retirees may trigger as well. Level 7 restrictions
- Approval from Medicare Offshore Approval committee, meet once a week
- Reach out to Enterprise sourcing and procurement for the sourcing
- How to segregate data? Touch with Vikas & team
- Get engagement ids for offshore vendors

UCEE Data Product for subscription: **UCEE-UHC Marketing Dataset v1.0**

## HCP Data Catalog (uhq.com)

Name	Email
Bangale, Gaurav	<a href="mailto:gaurav.bangale@optum.com">gaurav.bangale@optum.com</a>
Cheema, Dave	<a href="mailto:dave.cheema@optum.com">dave.cheema@optum.com</a>
Palla, Sandeep	<a href="mailto:sandeep.palla@optum.com">sandeep.palla@optum.com</a>
Madapati, Srikanth	<a href="mailto:srikanth_madapati@optum.com">srikanth_madapati@optum.com</a>
Maheshwaridevi, Kodi	<a href="mailto:kodi_maheshwaridevi@optum.com">kodi_maheshwaridevi@optum.com</a>
Pal, Sujit	<a href="mailto:sujit.pal@optum.com">sujit.pal@optum.com</a>
Sahiti, Ramala	<a href="mailto:ramala_sahiti@optum.com">ramala_sahiti@optum.com</a>
Sahoo, Asit K	<a href="mailto:asit_sahoo@optum.com">asit_sahoo@optum.com</a>
Sharma, Mudit	<a href="mailto:mudit_sharma@optum.com">mudit_sharma@optum.com</a>
Singh, Sushmita	<a href="mailto:sushmita.singh@optum.com">sushmita.singh@optum.com</a>
Sowjanya, Veeramallu	<a href="mailto:veeramallu_sowjanya@optum.com">veeramallu_sowjanya@optum.com</a>
Swetha, Annaram	<a href="mailto:annaram_swetha@optum.com">annaram_swetha@optum.com</a>
Shin, John S	<a href="mailto:john.shin@optum.com">john.shin@optum.com</a>
Nikam, Jyoti	<a href="mailto:jyoti.nikam@optum.com">jyoti.nikam@optum.com</a>
Boinpally, Harish	<a href="mailto:harish_boinpally@optum.com">harish_boinpally@optum.com</a>
Byrisetti, Danababu	<a href="mailto:byrisetti_danababu@optum.com">byrisetti_danababu@optum.com</a>
Nagulapati, Veeranjaneyulu	<a href="mailto:veeranjaneyulu_nagulapati@optum.com">veeranjaneyulu_nagulapati@optum.com</a>
Joshi, Kamlesh	<a href="mailto:kamlesh.joshi@optum.com">kamlesh.joshi@optum.com</a>
isdc_prd_dw	<a href="mailto:isdc_prd_dw@optum.com">isdc_prd_dw@optum.com</a>

Database: UBLIA\_PRD\_ISDC\_PRD\_DB

Role: AZU\_SDRP\_UBLIA\_PRD\_DEVELOPER\_ROLE

Scott Barker

My understanding was that we are not creating any data products in PROD until we meet with Legal. We meet with Legal tomorrow.

Also, here is the requirement regarding off-shore. Off-shore staff must NOT have the ability to save data to off-shore server, or locally to laptop.

**From:** Maggs, Robert E <[robert\\_e\\_maggs@uhc.com](mailto:robert_e_maggs@uhc.com)>  
**Sent:** Thursday, May 23, 2024 9:17 AM  
**To:** Corr, Rosemary R <[rosemary.corr@uhc.com](mailto:rosemary.corr@uhc.com)>; Barker, Scott D <[scott\\_barker@uhc.com](mailto:scott_barker@uhc.com)>; Chepeus, Traci <[traci\\_chepus@uhc.com](mailto:traci_chepus@uhc.com)>  
**Cc:** Paul, Sojan K <[sojan\\_paul@uhc.com](mailto:sojan_paul@uhc.com)>  
**Subject:** RE: Data Requests & Offshore

Scott,

The only off-shore policy that I am aware of is that we can not store any data off-shore. So once you ingest any data, any storage would need to be on-shore. No off-shore staff should have the ability to save to an off-shore server or locally on their laptop.

Rob

To delete or remove or cancel a subscription:

### My Data

Data Assets    Data Products    Datasets    Subscriptions    Access Groups

**Subscriptions**  
 Subscriptions that you have access to or that you are admin of.

Show only admin role

Subscription Name	Product Name	Status	Information requests	Access Group	Start Date	End Date	Approvals
UCF2-SDC-SUBS 05000000000000000000000000000000	UCF2-UHC Mark... DP000000000000000000000000000000	Pending		rg-isdc-dev-47d0500	06/27/2024	06/26/2029	<input type="checkbox"/> Approval
Dave Choomra Te... 05000000000000000000000000000000	MRFD-KWALK-CL... DP000000000000000000000000000000	Cancelled		rg-isdc-dev-47d0500	07/31/2024	07/31/2024	<input type="checkbox"/> Approval
UCF2-SDC-SUB 05000000000000000000000000000000	UCF2-UHC Mark... DP000000000000000000000000000000	Draft		rg-isdc-dev-47d0500	07/31/2024	07/30/2025	<input type="checkbox"/> Approval

**Actions**

- 
- 

The subscription development lifecycle is either POC or Project. The admin of the Access Group has 30 days from the original subscription end date to request an extension. If the date is beyond 30 days, an extension request will not be available and a brand new subscription will need to be submitted.

7 days prior to the extension end date, an email will be generated to all users within the Access Group. Access Group admins can request an extension in two different areas within the Catalog.

- Within the Subscription by clicking on the ellipsis & selecting 'Extend':

**DEMOSubscription**

**Summary**

Approvals	Access details	Access group
All approvals listed	Snowflake (3 datasets)	rg-isdc-dev-47d0500
Platform instance	UHC_Ingest	

**Subscription name**: DEMOSubscription  
**Application ID**: AID\_004231 (AID\_004231)  
**Resource group**: Isdc-prd-products-test

**Development lifecycle**: POC  
**Data access lifetime**: 120/03/2023 - 12/05/2023  
**Timeline Explanation**: Determined time necessary to complete POC  
**Related DUR**:

**Actions**

- 
- 

- Within 'My Data', click on the ellipsis within Actions for the subscription & selecting 'Extend':

Selecting 'Extend' in both places will show the Subscription Extension request

#### Storage Tenant Data Products:

- [Edits to a Published Data Product](#)
- [Subscription Impacts from Data Product Edits](#)

- [Email to Subscribers](#)

In our working session today, the following questions came up:

- When we are trying to subscribe a data product, there is a question: "**How will the data be consumed?**". There are two options: 1. Query in place and 2. Target Application. What should we do when our need is to use this data product in an application, e.g., Tableau BI and also to query it? What would be your solution/recommendations?

\* How will the data be consumed?

**Answer:** If you select 'target application' there is a follow-up question that asks if the target application is compliant. Would Tableau BI have an overall application Id to provide? You can also provide more detail within the intended use section and get direction from the approvers during the subscription submission on this question specifically as well

- How do we associate a data product with an Asset? Also, what is the relationship hierarchy?

**Answer:** An asset owner must add the data product to the asset to create that relationship today. If there is an asset you want to associate to your data product, I would suggest reaching out to the owners. Eventually, we'll be adding the ability for a data product owner to make that association as well - however that will require approval from the asset owners. This is not immediately planned.

- Does the "Offshore Restriction" apply on the Data producer side? If yes, how is that enforced/implemented? For example, I need to load data into a Storage Tenant database/schema/table; or I need to modify data structure, or I need to run some queries to review/analyze an issue and I'm from the offshore. Does the Offshore Restriction apply to that data producer? If yes, how is that implemented?

**Answer:** You have team members in the data producer team with different access to data via SECURE roles.

#### Offshore Data Restrictions for Med Supp book of business:

RE: need to confirm understanding of offshore data restrictions for Med Supp book of business



Chepeus, Traci

To: Barker, Scott D; Ubele, Douglas J; Paul, Sojan K; Haley, Allison (Legal)  
Cc: Shin, John S; Turk, Brian J (he/him); Cheema, Dave; Gulraiz, Sheharyar; Maggs, Robert E;  
Saripirala, Sreenadha Reddy; Majorossy, Edward

Retention Policy: UHGlinbox (90 days)



Wed 9/4/2024 7:41 AM

Expires: 12/3/2024

Below is contract language from the Agreement Regarding Security and Data Privacy Terms for AARP Member Data:

UHIC acknowledges that AARP and ASI are headquartered in the United States and all storage activities of Member Data shall occur in the United States. UHIC represents and warrants that it shall only store Member Data in the United States and that it shall defend, indemnify, and hold AARP and ASI harmless from and against any and all liabilities, losses, obligations, damages, costs, penalties, fines, and expenses (including attorneys' fees and expenses) as result of UHIC or Third-Party Contractors storing or processing any Member Data outside of the United States.

Traci Chepeus, CHC, CHPC  
Director, Contract Management & Compliance Program Integrity  
Insurance Solutions  
UnitedHealthcare Medicare & Retirement  
Phone: 612-425-3984  
[traci\\_chepeus@uhc.com](mailto:traci_chepeus@uhc.com)



Integrity • Compassion • Inclusion • Relationships • Innovation • Performance

**From:** Barker, Scott D <[scott\\_barker@uhc.com](mailto:scott_barker@uhc.com)>

**Sent:** Tuesday, September 3, 2024 5:18 PM

**To:** Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>; Chepeus, Traci <[traci\\_chepeus@uhc.com](mailto:traci_chepeus@uhc.com)>; Haley, Allison (Legal) <[ally\\_haley@uhc.com](mailto:ally_haley@uhc.com)>

**Cc:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Turk, Brian J (he/him) <[brian\\_turk@optum.com](mailto:brian_turk@optum.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Gulraiz, Sheharyar <[sheharyar\\_gulraiz@uhc.com](mailto:sheharyar_gulraiz@uhc.com)>; Maggs, Robert E <[robert\\_e\\_maggs@uhc.com](mailto:robert_e_maggs@uhc.com)>; Saripirala, Sreenadha Reddy <[sreenadha\\_saripirala@uhc.com](mailto:sreenadha_saripirala@uhc.com)>; Majorossy, Edward <[ed\\_mainrossy@uhc.com](mailto:ed_mainrossy@uhc.com)>

**To:** Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>; Paul, Sojan K <[sojan\\_paul@uhc.com](mailto:sojan_paul@uhc.com)>; Chepeus, Traci <[traci\\_chepeus@uhc.com](mailto:traci_chepeus@uhc.com)>; Haley, Allison (Legal) <[ally\\_haley@uhc.com](mailto:ally_haley@uhc.com)>  
**Cc:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Turk, Brian J (he/him) <[brian\\_turk@optum.com](mailto:brian_turk@optum.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Gulraiz, Sheharyar <[sheharyar\\_gulraiz@uhc.com](mailto:sheharyar_gulraiz@uhc.com)>; Maggs, Robert E <[robert\\_e\\_maggs@uhc.com](mailto:robert_e_maggs@uhc.com)>; Saripirala, Sreenadha Reddy <[sreenadha\\_saripirala@uhc.com](mailto:sreenadha_saripirala@uhc.com)>; Majorossy, Edward <[ed\\_majorossy@uhc.com](mailto:ed_majorossy@uhc.com)>

**Subject:** RE: need to confirm understanding of offshore data restrictions for Med Supp book of business

Hello everyone,

I just wanted to follow up on 2 items:

Publisher offshore storage restriction –

- we decided last week to answer yes, because we understand that no data may be stored offshore on either local servers or laptops
- we would like to get a either a document to reference or snippet of contract language
- *Traci and Ally would either of you be able to provide this for us?*

Subscriber offshore storage and viewing restriction –

- We are looking to load Medicare Advantage data into DEEP
- MA is telling us they have special customers – like state and govt agencies – where their data cannot be stored or accessed at all off shore.
- We would have to attest to protecting those customers from being accessed offshore
- *I think we need to know if the MA data would be loaded into new standalone tables, existing tables, or copies of existing tables? In any case DEEP would need a new role, and maybe some views to do the joins or filters.*
- *Doug or Sheharyar do you know who might be able to answer above?*

Thanks,  
Scott

**From:** Barker, Scott D

**Sent:** Thursday, August 29, 2024 12:34 PM

**To:** Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>; Paul, Sojan K <[sojan\\_paul@uhc.com](mailto:sojan_paul@uhc.com)>; Chepeus, Traci <[traci\\_chepeus@uhc.com](mailto:traci_chepeus@uhc.com)>; Haley, Allison (Legal) <[ally\\_haley@uhc.com](mailto:ally_haley@uhc.com)>

**Cc:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Turk, Brian J (he/him) <[brian\\_turk@optum.com](mailto:brian_turk@optum.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Gulraiz, Sheharyar <[sheharyar\\_gulraiz@uhc.com](mailto:sheharyar_gulraiz@uhc.com)>; Maggs, Robert E <[robert\\_e\\_maggs@uhc.com](mailto:robert_e_maggs@uhc.com)>; Saripirala, Sreenadha Reddy <[sreenadha\\_saripirala@uhc.com](mailto:sreenadha_saripirala@uhc.com)>; Majorossy, Edward <[ed\\_majorossy@uhc.com](mailto:ed_majorossy@uhc.com)>

**Subject:** RE: need to confirm understanding of offshore data restrictions for Med Supp book of business

We met today about 2 distinct questions, one as HCP publisher, and one as HCP subscriber.

Publisher question around data storage offshore:

- For publisher, we said that we should answer YES to offshore restriction question for all the new data products that we set up. This is because we know anecdotally that no data can be stored on offshore servers or laptops
- This will initiate a Tier 2 level process, which we'll learn more about as we go through
- I included Sree and Ed – as I think they have the edit permission to change from NO to YES in data catalog.

Does this data product have offshore restrictions?  YES

RE: need to confirm understanding of offshore data restrictions for Med Supp book of business



Chepeus, Traci

To: Barker, Scott D; Ubele, Douglas J; Paul, Sojan K; Haley, Allison (Legal)  
Cc: Shin, John S; Turk, Brian J (he/him); Cheema, Dave; Gulraiz, Sheharyar; Maggs, Robert E;

Saripirala, Sreenadha Reddy; Majorossy, Edward

Retention Policy: UHGInbox (90 days)

Expires 12/3/2024

Wed 9/4/2024 7:41 AM

Subscriber question about data access (view only) offshore:

- If I understand correctly, we want to receive MA data and put in DEEP? Apparently there are MA customers that are sensitive govt agencies, and these customers have additional restriction, that data cannot be viewed by people offshore. These customers actually pay a premium for this.
- We don't think we have any similar requirement for Med Supp members (since they are retired individuals)
- As for receiving the MA data, we think we would have to build views to filter out sensitive customers, and that offshore folks would have to use these views, or not allow offshore folks to access the MA data at all.

More to follow, I'm sure, but this gets us past our current blocker... ☺

Thanks,  
Scott

-----Original Appointment-----

**From:** Barker, Scott D

**Sent:** Wednesday, August 28, 2024 3:49 PM

**To:** Barker, Scott D; Ubele, Douglas J; Paul, Sojan K; Chepeus, Traci; Haley, Allison (Legal)

**Cc:** Shin, John S; Turk, Brian J (he/him); Cheema, Dave; Gulraiz, Sheharyar; Maggs, Robert E

**Subject:** need to confirm understanding of offshore data restrictions for Med Supp book of business

**When:** Thursday, August 29, 2024 9:30 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).

**Where:** Microsoft Teams Meeting

Touchbase on this... hard to find a common time...

If we can't confirm our understanding on the questions below in next day or two, what do we do?

Microsoft Teams Need help?

Join the meeting now

Meeting ID: 930 545 0047#

Data Catalog Update Frequency: [https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/partner\\_integrations](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/partner_integrations)

**USE SECONDARY ROLES** <https://docs.snowflake.com/en/sql-reference/sql/use-secondary-roles>

++++++

**Data Catalog Update Frequency:** [https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/partner\\_integrations](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/partner_integrations)

## USE SECONDARY ROLES <https://docs.snowflake.com/en/sql-reference/sql/use-secondary-roles>

USE SECONDARY ROLES {

  ALL  
  | NONE  
  | <role\_name> [ , <role\_name> ... ]  
}

### Steps to decommission V2 Tenant:

V2 tenant decom should follow these steps

- Data cannot be recovered after decom. Make a decision to decom when you feel comfortable to get rid of the data
- Communicate to your Users/consumers of the change.
- Stop any process that reads/writes data to/from your tenant.
- Stop any scheduled tasks/processes in your tenant.
- Remove Data Products (if any) from HCP Data Catalog
- Request to delete any integrations (if any) (Storage, Security, etc)
- Request to remove any IPs that were whitelisted (if any)
- Request to delete any SF Datashares (if any) (inbound or outbound)
- Remove all users from secure groups associated to your V2 tenant. If needed, You can place a bulk request via [this process](#)
- Remove all secure Roles & Groups
- Create an incident with SDRP to decom the tenant.
- SDRP will process the removal of all SF objects associated to the tenant.

Question: How can you tell whether a database belongs to **V2 Tenant or Storage Tenant**?

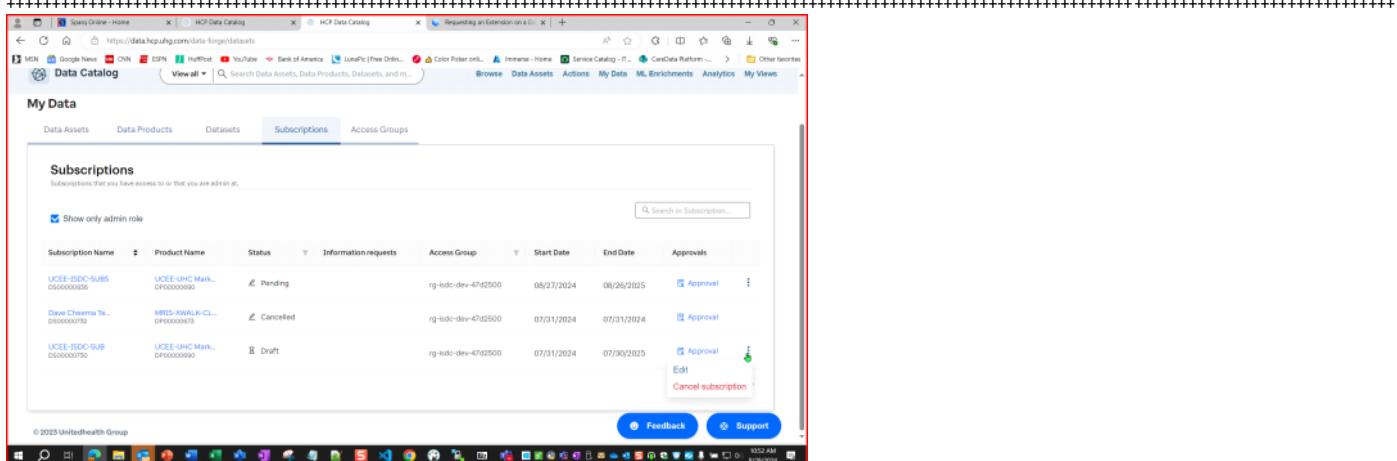
Answer: you can look at the first part of the database name before the first underscore, and see if that prefix matches one of the directories in [this repo](#). if it does, it's a V2 tenant, otherwise it's a storage tenant.

Question: Do you have to have an **AIDE ID to create a data product**, because, it appears to be optional?

Answer: It's **not required**. It is optional

Question: How does ownership (Business, Technical, etc.) gets added to Datasets, since it is a nightly job process? I was trying to help a user create a data product and when we added a couple of datasets, it was throwing an error to the effect of: This Dataset lacks ownership. Where does the ownership gets picked from to be added to a Dataset?

Answer: There are some owners that are sent at ingestion. The existing owners can add additional owners. I'm not 100 % sure where the owners are obtained for the SDRP datasets, that team can confirm.



### UCSS Data Product: HCP Data Product UHC AARP INTERACTION TRANSCRIPTS

++++++

+  
RE: MRISDA Billing DS00000935 -



I'm seeing this message has been approved: <https://data.hcp.uhg.com/data-forge/approvals/urm://dfSubscription:9025b8e2-05e1-4f1e-ad8c-a5c08ba2b43a/urm://task:00812d2b-ebf0-474f-8c71-edfb2b2d8f387/approvalProgress>

Once approved, there is no way today to edit the existing subscription form details. If changes are necessary, please submit a service now ticket. That can be initiated within the 'support' button within the Data Catalog.

From: Corr, Rosemary R. <[rcorr@uhg.com](mailto:rcorr@uhg.com)>  
Sent: Thursday, September 19, 2024 7:30 AM  
To: Smith, Christopher B. <[csmith@uhg.com](mailto:csmith@uhg.com)>; Nowak, Bobbie-Jean <[bj.nowak@optum.com](mailto:bj.nowak@optum.com)>;  
Cc: Patelapati, Madhuri <[mpatelapati@uhg.com](mailto:mpatelapati@uhg.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>  
Subject: RE: MRISDA Billing DS00000935 -

++ Bobbie-Jean Nowak

Looping in Bobbie-Jean.  
Thank you.  
**Rose**

RE: Need elaboration of intended data use for subscription: UHC-AARP-ISDC-OCSS (DS00000953)



MRIS Data Analytics uses OCSS Data in a few different ways.

At a very high level we use OCSS data to understand a (potential) member's journey through the call center and pain points they may face. We often use these findings providing coaching opportunities back to OCSS or to influence decision making for our own communication strategies. Access to this data in Snowflake would allow us to continue to supplement call center data with membership and experience data to the measure success of initiatives and continue to improve the experience of Medicare Supplement members.

For more detailed use cases:

use these findings providing coaching opportunities back to OCSS or to influence decision making for our own communication strategies. Access to this data in Snowflake would allow us to continue to supplement call center data with membership and experience data to the measure success of initiatives and continue to improve the experience of Medicare Supplement members.

For more detailed use cases:

For Sales Calls: We work on in depth analyses related to a (potential) member's acquisition journey through the call center. From when the hit the AT&T switchboard to when they become a paid sale, we follow their journey through the call center.

OCSS Performance Dashboard (with inquiries) - Reports the opportunities, apps and sales generated through Optum call center with various stages of acquisition funnel.

DTC Sales Dashboard - Provides DTC Sale opportunity trends across different distribution channels, state, customer segments based on the initial contact channel.

We also are involved in some ad-hoc sales analyses such as reviewing members who sign up for EFT at the same time they enroll or highlighting issues such as where a

For Service Calls: We work on in depth analyses regarding a member's experience in hopes of eliminating bumpy experiences.

We have several dashboards that utilize the transcripts for various things (Calls from combo members, calls regarding rerate/rebill, general transcripts) that are used by the business to identify pain points a member may be experiencing. These dashboards have uncovered opportunities for wording changes both at the call center and in marketing campaigns.

Service Calls Dashboard: Tracks the Service calls coming to Optum call center and understanding their reasons of calling to understand the member experience (includes things like repeat caller analyses to see if we can address the member's concerns)

We are constantly reviewing calls data for ad-hoc purposes to improve the customer experience at the call center often joining it to other experience markers such as Web/App usage or survey scores.

We also utilize other Call Center metrics such as RTOs. While the Call Center can track the offer rate, we can take it a step further to evaluate the success rate of the RTO.

We are currently running a collaborative project to evaluate the success of the Web Registration RTO where the OCSS team sends us the RTO information and we send it back letting them know how many members registered for the Web Portal within 2 days of receiving the RTO, this is then used by OCSS to understand the success rates and provide coaching to their teams.

Please let me know if this is sufficient justification or if you need more.

Thanks,  
Mary Elizabeth

# Automation Scripts to run Azcopy commands

Wednesday, January 10, 2024 7:23 PM

## Parameter-driven script to execute azcopy commands in PuTTY:

### 1. Create a Bash script file (e.g., azcopy\_putty.sh):

```
Bash
#!/bin/bash

# Declare variables for parameters
source_url="$1"
destination_url="$2"
additional_args="$3"

# Validate parameters
if [[ -z "$source_url" || -z "$destination_url" ]]; then
    echo "Error: Please provide both source and destination URLs."
    exit 1
fi

# Connect to the server using PuTTY
putty -ssh user@hostname -pw password << EOF

# Execute the azcopy command with parameters
azcopy $additional_args $source_url $destination_url

EOF
```

### 2. Make the script executable:

```
chmod +x azcopy_putty.sh
```

### 3. Run the script with parameters:

```
./azcopy_putty.sh <source_url> <destination_url> [additional_azcopy_arguments]
```

#### Example usage:

```
./azcopy_putty.sh https://mystorage.blob.core.windows.net/container/file.txt /path/to/local/file.txt --recursive
```

#### Key improvements:

- **Comprehensive parameter validation:** Ensures all required parameters are provided.
- **Explicit PuTTY exit:** Helps prevent hanging sessions.
- **Clearer variable usage:** Improves readability and maintainability.
- **Concise command execution:** Streamlines the process within PuTTY.
- **Informative comments:** Explain script functionality for future reference.
- **Security considerations:** Avoid storing sensitive information like passwords directly in the script. Consider using environment variables or secure storage mechanisms.

#### Additional considerations:

- **Testing:** Thoroughly test the script in a non-production environment before deployment.
- **Error handling:** Implement robust error handling to log issues and prevent unexpected behavior.
- **Logging:** Consider adding logging to track script execution and identify potential problems.

---

## Parameter-driven script to execute the azcopy command in Unix:

```
Bash
#!/bin/bash

# Require all parameters to be provided
if [[ -z "$1" || -z "$2" || -z "$3" || -z "$4" ]]; then
    echo "Usage: $0 <source_path> <destination_path> <account_key> <container_name>"
    exit 1
fi

# Store parameters for clarity
source_path=$1
destination_path=$2
account_key=$3
container_name=$4

# Ensure azcopy is installed and accessible
if ! command -v azcopy >& /dev/null; then
    echo "Error: azcopy not found. Please install it and ensure it's accessible in your PATH."
    exit 1
fi

# Construct the azcopy command with parameters
azcopy_command="azcopy copy $source_path $destination_path --account-key $account_key --destination-container $container_name"

# Execute the azcopy command
echo "Executing command: $azcopy_command"
eval $azcopy_command

# Check the exit code and provide feedback
if [[ $? -eq 0 ]]; then
    echo "Azcopy command completed successfully."
else
    echo "Azcopy command failed. Please check the logs for details."
fi
```

#### Key features and best practices:

- **Parameter validation:** Ensures all required parameters are provided.
- **Clear variable names:** Enhances readability and maintainability.
- **Command availability check:** Prevents errors if azcopy is not found.
- **Constructed command:** Builds the azcopy command dynamically for flexibility.
- **Command logging:** Displays the executed command for transparency.
- **Exit code handling:** Provides feedback on command success or failure.

- **Concise comments:** Explains key parts of the script without verbosity.
- **Error handling:** Gracefully handles missing azcopy and command failures.
- **Informative output:** Provides clear feedback to the user.

**To use the script:**

1. Save it as a file (e.g., azcopy\_script.sh).
2. Make it executable with chmod +x azcopy\_script.sh.
3. Execute it with the required parameters:  
Bash

```
./azcopy_script.sh "<source_path>" "<destination_path>" "<account_key>" "<container_name>"
```

Remember to replace the placeholders with your actual values.

```
#####
Run multiple AzCopy commands in Unix:
```

**1. Sequential Execution:**

- Use the semicolon (;) to separate commands:  
Bash
- ```
azcopy command1 ; azcopy command2 ; azcopy command3
• Each command will execute one after the other.
```

**2. Background Execution:**

- Use the ampersand (&) to run commands in the background:  
Bash
- ```
azcopy command1 & azcopy command2 & azcopy command3
• This allows subsequent commands to start before previous ones finish.
```

**3. Bash Script:**

- Create a Bash script file (e.g., azcopy\_commands.sh):  
Bash

```
#!/bin/bash
```

```
azcopy command1
azcopy command2
azcopy command3
```

- Make the script executable:  
Bash

```
chmod +x azcopy_commands.sh
```

- Run the script:  
Bash

```
./azcopy_commands.sh
```

**4. Parallel Execution (GNU Parallel):**

- Install GNU Parallel:  
Bash
- ```
sudo apt-get install parallel
• Use parallel to execute commands in parallel:  
Bash
```

```
parallel azcopy :::: command1 command2 command3
```

# Access Info

Sunday, March 10, 2024 6:20 PM

V2 tenancy to Storage tenancy migration components (Sandeep): [EDP Snowflake Storage Migration](#)

HCP Data Catalog: [HCP Data Catalog \(uhg.com\)](#)

To create a new Data Product: [HCP Data Catalog \(uhg.com\)](#)

Register Data Product: <https://data.hcp.uhg.com/data-forge/productRegistration/new>

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

Compute Tenant: [https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/compute\\_tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/compute_tenant)

<https://console.hcp.uhg.com/>

<https://docs.hcp.uhg.com/account-manager/overview>

<https://docs.hcp.uhg.com/data-catalog/data-product-subscription>

<https://data.hcp.uhg.com/domains>

<https://docs.hcp.uhg.com/data-catalog/contact-us>

AIDE id: UHGWM110-017761

EDP V2 Tenant database: UBLIA\_TST\_ISDC\_DEV\_DB

Subscription: **isdc consumption-prod**, AIDE ID: AIDE\_0086054

Data Products: MRIS-PRE-ADJUDICATED-CLAIMS-837, MRIS-XWALK-CLAIM

Role to create data products in HCP platform: **UHGRG\_rg\_isdc\_dev\_47d2500\_CONTRIBUTOR**

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/partner\\_integrations](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/partner_integrations)

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/costs#costs](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/costs#costs)

**UHG Tech. Hub:** [TechOps Hub \(uhg.com\)](#)

**AIDE ID for Gene Moffitt:** MRIS Third Party Consumer (AIDE\_0086054)

**SDRP Support:** [support process](#)

[HCP Data Platform User Group | Strategic Data Repository Platform | Microsoft Teams](#)

**DUR for MDP UCEE:** DUR86

**Microstrategy non-user (service account) id:** [isdc\\_prd\\_rpt@optum.com](mailto:isdc_prd_rpt@optum.com)

Bobbie-Jean, Deepali Omray, Anjali Arora, Kate Koy  
Oneill, Nisreen <nisreen\_oneill@uhc.com>; Obrien, Kevin <kevin\_obrien@optum.com>; Sharma, Sanjay <sanjay\_sharma24@uhc.com>; Merten, Matthew T <matt.merten@optum.com>; Gajara, Kamlesh <kamlesh.gajara@optum.com>

[Account Manager](#) - Account: UHGWM110-017761

From <<https://console.hcp.uhg.com/account-manager/#/account/UHGWM110-017761>>

**Analytic Data Products:** <https://docs.hcp.uhg.com/data-catalog/analytic-data-products-whitepaper>

To create databases and schemas in the Storage Tenant:

<https://console.hcp.uhg.com/dashboard/data-management/sdrp/containerRole>

**MS Group:** UHGRG\_rg\_isdc\_dev\_47d2500\_CONTRIBUTOR

The screenshot shows a web-based form titled "Request Type: Change Access". It includes a note about the company's commitment to protecting PII. The "Request For" dropdown is set to "Platform: MS". The "Environment" dropdown is set to "Prod". The "Resource" dropdown is set to "MS". The "User ID" field contains "anal029". The "Group(s)" section has a note about requesting up to 25 groups and includes a search bar with the placeholder "UHGRG\_rg\_isdc\_dev\_47d2500\_CONTRIBUTOR".

Azure Cost Analysis URL: <https://portal.azure.com/>

**System Access Requirements:** <https://uhgazure.sharepoint.com/:r/sites/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements?csf=1&web=1&e=2gGdp8>

DEEP: <https://uhgazure.sharepoint.com/:r/sites/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements/DEEP?csf=1&web=1&e=gugxJQ>

ISDWD/ODS: <https://uhgazure.sharepoint.com/:r/sites/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements/ISDWD/ODS?csf=1&web=1&e=gugxJQ>

SMART: <https://uhgazure.sharepoint.com/:r/sites/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/System%20Access%20Requirements/SMART?csf=1&web=1&e=elkoG4>

My SharePoint: : [NYAPD](#)

**Dev Environment:**

UNIX HOST: rn000057812 (rn000057812.uhc.com)

HIVE URL: jdbc:hive2://rn000057812:10498/default

Prod Environment:

HIVE URL: jdbc:hive2://rp000062313.uhc.com:10428/default

Unix HOST: rp000062313(rp000062313.uhc.com)

echo \$PATH:/opt/mapr/java/current/bin:/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/opt/mapr/spark/spark/bin  
Add your files path to the Path: export PATH=/home/dcheema/migration\_scripts:\$PATH"

JQ utility: /mapr/datalake/optum/optuminsight/t\_dlz/tst/developer/jq

Best practice: move personal shell scripts into the /usr/local/bin directory:

```
sudo mv hello /usr/local/bin
=====
Prod Azcopy:/mapr/datalake/optum/optuminsight/p_dlz/prd/developer/azcopy/azcopy_linux_amd64_10.14.1/azcopy
Prod JQ:/mapr/datalake/optum/optuminsight/p_dlz/prd/developer/jq/jq
```

ROLE: AZU\_DWS\_ISDC\_DEV\_SYS\_ADMIN\_ROLE

TWS is the starting point.

MRIS GitHub: <https://github.com/uhc-mris/lsc>; <https://github.com/uhc-mris>;

EDP\_FWA\_TAXONOMY\_MISMATCH\_LOAD

EDP-NYAPD-PLAN

```
=====
Oracle Database credentials:
```

```
Dev ISWDV01(Host: ed08-scan01, service: iswdv01svc.uhc.com)
ISWDV02(Host: ed08-scan01, service: iswdv02svc.uhc.com)
ISWDV03(Host: ed08-scan01, service: iswdv03svc.uhc.com)
```

Prod: ISWPRO1(Host: ep26-scan01, service: iswpr01svc.uhc.com)

These Roles will give provide Read Access:

These Roles will give provide Read Access:

```
CONNECT, UHG_SELECT_CATALOG_ROLE, APPLICATION_RO
In Dev/Test, if you need write access, please request for UHG_DEVELOPER_ROLE
```

User Id: UHG\_001617529

Oracle User ID: UHG\_001617529

ISWDV01 Initial Password: Toaster2010!

Oracle User ID: UHG\_001617529

ISWDV02 Initial Password: Toaster2010!

Oracle User ID: UHG\_001617529

ISWDV03 Initial Password: Toaster2010!

```
=====
NAS Drive to store output: /etldata/isw03/isdc/outbox
```

Project folder: /etldata/isw03/isdc/outbox/historical\_data\_migration\_oracle/exec

```
=====
+++
```

Historical Data Migration Snowflake credentials:

```
URL: https://uhgdwaas.east-us-2.azure.snowflakecomputing.com/console/login/
account: 'uhgdwaas.east-us-2.azure'
user: 'isdc_dev_dw@optum.com'
password: 'L9G8G8cTJF4zYZ'
```

Role: AZU\_DWS\_ISDC\_DEV\_SYS\_ADMIN\_ROLE

Warehouse: ISDC\_DEV\_ETL\_XS\_WH

Database: ISDC\_DEV\_DW\_DB

Schema: SRC\_ISDW

stagename: @isdw\_dev\_stage/archive\_test

```
=====
Snowflake Prod:
```

```
account: 'uhgdwaas.east-us-2.azure'
user: 'isdc_prd_dw@optum.com'
password: 'jCq1pqh3VX88cF9'
private_key: pkb
role: AZU_SDRPUBLIA_PRD_DEVELOPER_ROLE
warehouse: UBLIA_PRD_WORK_XS_WH
database: UBLIA_PRD_ISDC_PRD_DB
```

```
=====
Snowflake Storage Tenant DEV with my ID:
```

URL: <https://uhg-uhgdwaasnnonprod.snowflakecomputing.com/console>

ROLE: AZU\_SDRPUBLIA\_DEV\_DEVELOPER\_ROLE

WAREHOUSE: UBLIA\_DEV\_ETL\_XS\_WH

DATABASE: UBLIA\_DEV\_ISDC\_DEV\_DB

```
=====
CURRENT_ROLE: AZU_SDRPUBLIA_PRD_SUPPORT_ROLE
```

CURRENT\_WAREHOUSE: UBLIA\_PRD\_WORK\_XS\_WH

DATABASE: UBLIA\_PRD\_ISDC\_PRD\_DB

```
=====
Prod Oracle credentials:
```

oracle:

db: 'ISDW'

```

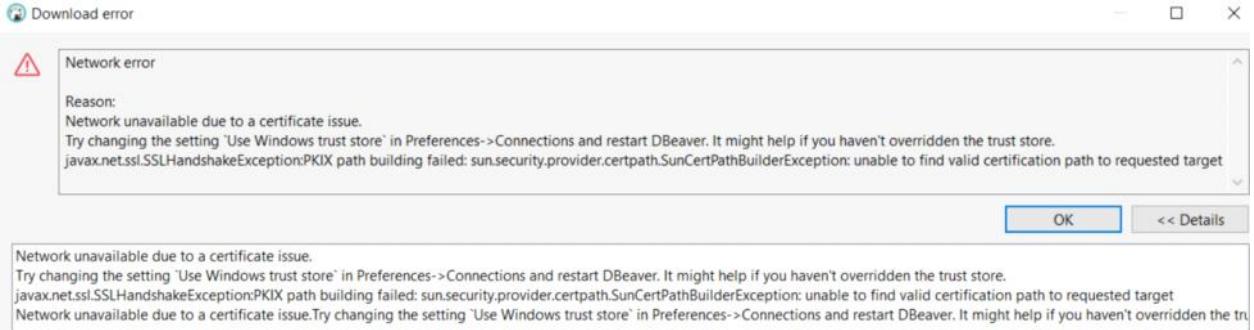
db_username: 'UHG_001617529'
db_password: '3j+1b=4CHS@'
db_hostName: 'ep26-scan01'
db_service_name: 'iswpr01svc.uhc.com'
db_port: '1521'
maxBatchSize: 100000

```

++++++  
+  
Snowflake Storage Tenancy model recommended:  
[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/configuration#warehouse-file](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/configuration#warehouse-file)  
[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)  
++++++

**SDRP Teams Channel:** [HCP Data Platform User Group | Strategic Data Repository Platform | Microsoft Teams](#)  
**Storage Tenant:** [Storage Tenant - Strategic Data Repository Platform \(SDRP\) | HCP Docs \(uhg.com\)](#)

++++++  
To fix the DBeaver Network error as shown below:



Follow the steps shown below to fix it:

1. On your DBeaver menu bar click **windows > preferences**.
2. Add <https://repo1.uhc.com/artifactory/repo> to the dbeaver settings (Connections --> Drivers --> Maven) as shown below.
3. Move it to the top >
4. Apply and close.



5. Open DBeaver again.
6. Click on Test Connection and it will prompt you to download the driver. Click on Download.
7. After Download is completed and installed, setup connection properties such as, Host, Service Name, Username, Password, etc.
8. Click on Test Connection. It should connect successfully.

++++++  
**DEEP DUR info:**

Hi All,  
DEEP team would not be able to join the call today. Please let me know if any information is required from our end.  
**DUR 183** Modernization Migration to Snowflake Cloud – was approved by Legal 12/12/2023  
It includes Source data from : EDP, ISDW, DEEP, SMART, 837 Raw, COMPAS and Fox Claims to Target: EDP Cloud (MS Azure Cloud). Two EIS Risk Review #'s were referenced:  
MS Corp & MS Azure (Cloud) 22722323 & Snowflake 22974559  
**DUR 117** Cross-Product Attribution in MDP – was also approved 12/24/2023 for the Target: EDP Cloud (MS Azure Cloud) and references the same two EIS Risk Review #'s

Both DUR's cross reference:  
Optum's DUR [400687](#) EDP Modernization

**USE ONLY DUR 183, NOTHING ELSE**

[11:55 AM] Bangale, Gaurav  
[uhq-internal/DQM-data-migration2snowflake \(github.com\)](https://uhq-internal/DQM-data-migration2snowflake.github.com)

[11:56 AM] Bangale, Gaurav  
[snowflake.python.\(2\).zip](https://snowflake.python.(2).zip)

**HCC team:** [chad.brovold@optum.com](mailto:chad.brovold@optum.com)

**HCP - Health care platform:** <https://hcp.uhg.com/>

**Strategic Data Repository Platform (SDRP):** [https://docs.hcp.uhg.com/united-query-interface/strategic-data-repository-platform-\(sdrp\)](https://docs.hcp.uhg.com/united-query-interface/strategic-data-repository-platform-(sdrp))

<https://orbitbi-tableau.optum.com/#/site/DataAnalytics/views/MetadataDashboard-DEEPPROD/RoleDescription?iid=1>

Kornshell Python execute last command: fc -s

[https://portal.azure.com/?feature.msajs=true#view/Microsoft\\_Azure\\_PIMCommon/ActivationMenuBlade/~/azurerbac](https://portal.azure.com/?feature.msajs=true#view/Microsoft_Azure_PIMCommon/ActivationMenuBlade/~/azurerbac)

++++++

UNIX  
ISDW/ODS

Host Access: Dev: rn000095259.uhc.com, rn000095260.uhc.com  
Group Access: isdwread, msnisw, mspisw, dce  
MS Groups: ISDWSYS, MPC\_ISW\_RO, MPC\_USER, MPC\_ISW\_RWE \*\* not required if not developing new ETLs  
Username: dcheema, Pwd: <windows password>  
Oracle Database  
DEV: ISWDV01(Host: ed08-scan01, service: iswdv01svc.uhc.com),  
ISWDV02(Host: ed08-scan01, service: iswdv02svc.uhc.com),  
ISWDV03(Host: ed08-scan01, service: iswdv03svc.uhc.com)

Read Access Roles: CONNECT, UHG\_SELECT\_CATALOG\_ROLE, APPLICATION\_RO  
Write Access: UHG\_DEVELOPER\_ROLE

++++++  
**Prod Snowflake Internal Stage:**

Name: STAGE\_SNOWFLAKE\_ISDC  
SCHEMA: UTIL

++++++  
**Test Snowflake Internal Stage:**

Name: STAGE\_SNOWFLAKE\_ISDC  
SCHEMA: TST

++++++  
**Snowflake Prod database:**

UBLIA\_PRD\_ISDC\_PRD\_DB  
Credentials: isdc\_prd\_dw@optum.com/jCq1pqh3VX88cF9  
Snowflake: User ID: isdc\_prd\_dw@optum.com  
Password: jCq1pqh3VX88cF9  
Warehouse: UBLIA\_PRD\_ETL\_S\_WH

**Oracle Prod credentials:**

Host: ep26-scan01  
port: 1521  
service\_name: iswpr01svc.uhc.com  
user: SVC\_ACT\_EDP\_RO  
Password: EdpPp\*23

++++++  
**ORACLE ISDW COMPAS Infrastructure and credentials:**

HOST:ed21db02-vip  
PORT:1521  
SERVICE\_NAME: iswdv03svc.uhc.com  
USER\_NAME: SVC\_ACT\_DEV3\_ISDWETL  
password: lsWS-23

++++++  
**PROD ORACLE ISDW & COMPAS credentials:**

Host: ep26-scan01  
Service Name: iswpr01svc.uhc.com  
iswpr01svc.uhc.com  
PORT: 1521  
USER\_NAME: UHG\_001617529  
Password: 3j+1b=4CHS@

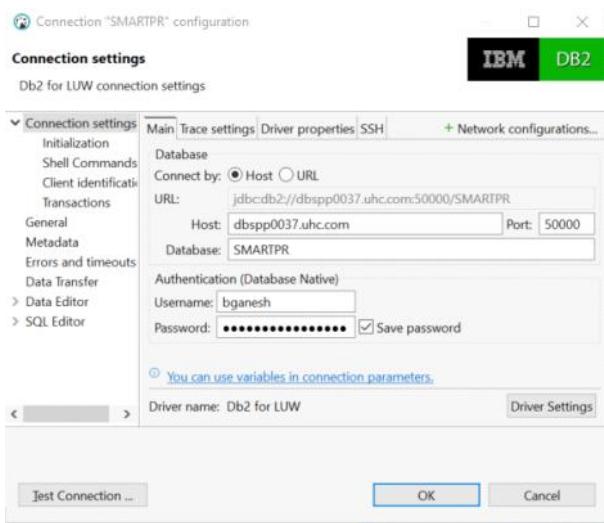
++++++  
**Oracle Database activity monitor:** <https://gptsupport.optum.com/>

++++++  
**DB2 Infrastructure and login info:**

We do not have a common Id or service account for DB2  
Use your own creds  
Host : db spp0037.uhc.com  
port 50000  
Database : SMARTPR  
ID : MSID, MSPWD

SMART Dev Database (DB2 for LUW connection settings)  
host: db spp0037.uhc.com  
database: SMARTPR  
port: 50000

-----  
**Dbeaver is used for client UI.**



How To -  
SMART\_S...

---

**DEEP access** has to be made through Secure by following the SharePoint link given at the end of the DEEP access requirement document. While requesting please select the following:

1. Application: DEEP - Data Science Enablement Platform
2. Environment: Non-Prod
3. Role: DEEP Data Governance Read Access (\*\*Only this role to be selected)
4. Please provide DUR 183 at the end

Please use below info to connect to hosts through DBeaver/WinSCP:

#### DEEP Non-prod

Servers : rn000069935, rn000057786

Connection string : jdbc:hive2://rn000069935:10195, jdbc:hive2://rn000057786:10195

Scripts for Ingestion Jobs: /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts/deep\_ingestion\_jobs/

Scripts for Non-prod processes: /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts/deep\_processes

Scripts for Non-prod utilities: /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts/deep\_utils

Path for Hive DataWarehouse: /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/hive/warehouse/

ECG landing path: /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_landing/inbox/deep\_prod\_inbox

---

**URL:** <https://uhgdwaas.east-us-2.azure.snowflakecomputing.com/console/login#/>

#### Storage Tenant credentials:

Test Details

Account: uhgdwaas.east-us-2.azure

DB: UBLIA\_TST\_ISDC\_TST\_DB

Role: AZU\_SDRP\_UBLIA\_TST\_DEVELOPER\_ROLE

WH: UBLIA\_TST\_WORK\_XS\_WH

User: ISDC\_DEV\_DW@OPTUM.COM

password: 'L9G8G8cTJF4zYZ'

Prd Env details

Account: uhgdwaas.east-us-2.azure

DB: UBLIA\_PRD\_ISDC\_PRD\_DB

Role: AZU\_SDRP\_UBLIA\_PRD\_DEVELOPER\_ROLE

WH: UBLIA\_PRD\_WORK\_XS\_WH

User: ISDC\_PRD\_DW@OPTUM.COM

password: same as old

---

**Cost center Dashboard:** <https://console.hcp.uhg.com/dashboard/data-management/sdrp/schema>

**Cost center Dashboard:** [Usage Dashboards - Strategic Data Repository Platform \(SDRP\) | HCP Docs \(uhg.com\)](https://Usage Dashboards - Strategic Data Repository Platform (SDRP) | HCP Docs (uhg.com))

---

**Edits to a published data product:** [Edits to a Published Data Product - Data Catalog | HCP Docs \(uhg.com\)](https://Edits to a Published Data Product - Data Catalog | HCP Docs (uhg.com))

---

Quick Links   Submit New Request

### OGG GENERAL USER

**Global Governance Review**



[Open New GR](#)

[Open new Global Governance Review](#)

**My Open Items**

No Records Found

---

**Items where I am a Delegate**

No Records Found

---

**Global Governance Links**



Optum Global Governance SharePoint  
Visit our SharePoint to view documents and resources to support your offshoring needs.

<https://uhq-eqrc.archerirm.us/apps/ArcherApp/Home.aspx?requestUrl=..%2fFoundation%2fWorkspaceDashboard.aspx%3fworkspaceId%3d109%26dashboardId%3d351#>

#### Data access

Subscription Name  
MRISDA

Resource Group  
MRISDAISDCProduct1

Data Product  
MRIS-BILLING NON-PROD

#### Platform instance general details

This Subscription grants access to a Data Product hosted within the Uhg Dwaas Snowflake Platform.

To start using your Subscription:

- Click the login link to navigate to the Snowflake UI in your browser
- Click the "Sign in using AzureAD" button if prompted. This will sign you in via Optum SSO. Do NOT login with manual username/password.
- In the top-right corner, click your name and select the Role named after your HCP Resource Group (see Credentials section below).
- You are now able to start executing queries against any Uhg Dwaas Snowflake data products your HCP Resource Group is subscribed to!
- For full documentation and advanced connection options, please visit the Product Site

#### Credentials

Provisioned User Account:  
gurtej\_singh@optum.com

Snowflake Role : HCDP\_MRISDA\_DATA\_VIEWER\_PRD\_DAG\_ROLE

#### Connection information

UHG DWaaS Login

- Account Identifier: uhg-uhgdwaas
- Browser Login: <https://uhg-uhgdwaas.snowflakecomputing.com/console>
- Connector Path: uhg\_uhgdwaas.east-us-2.azure

[Cancel](#)

+++++  
+++++  
+++++

## Strategic Data Repository Platform Dashboard

[← Back to Dashboard](#)

[Overview](#) [View yaml](#) [Events](#) (1)

Name: CMPT

Status: NOT Complete

Kind: sdrp.common.schema.v1

Namespace: mrisdaiscdataproduct1-e7ae0e7/sdrp.common.schema.v1/ccc-prd-cmpt-db/cmpt

ID: mrisdaiscdataproduct1-e7ae0e7/sdrp.common.schema.v1/ccc-prd-cmpt-db/cmpt

Parent: mrisdaiscdataproduct1-e7ae0e7/sdrp.common.database.v1/ccc-prd-cmpt-db

Name: CMPT

Schema Type: RAW

Is Transient: false

Snowflake Name: CMPT

Default Ddl Collation:

Data Retention Time In Days: 1

Max Data Extension Time In Days: 14

Reference Id: 3a006eae-d2d9-43ed-a495-af7ca1cb67fd

Created: Jul 31, 2024 @ 4:20 pm

Created by: a14d082b-8ac7-4ac6-8a2a-d5fc8b74ba6f

Last Updated: Jul 31, 2024 @ 4:20 pm

+++++  
+++++  
+++++

**Global Governance Review:**

Q. Ankita, a question for you: Is there an exception process by which Gaurav Bengale (from offshore) can be added to the Subscription Access group, even if only for a short while? He is our key technical resource who needs to work with the end consumer team to get them connected to Snowflake and Databricks. Thank you.

R. If you need offshore to access then you have to fill a Global governance review form which needs approval from GLR team  
<https://uhg-egrc.archerirm.us/apps/ArcherApp/Home.aspx?requestUrl=..%2fFoundation%2fWorkspaceDashboard.aspx%3fworkspaceId%3d109%26dashboardId%3d351#>  
Once you get the approval- you can share the approval link with me or attach it to the request

Q. Perfect. Thank you so much. Would you need Global governance review for each data product or one all-encompassing Global governance review? Thank you.

R. I think it can be a blanket approval if you mention in the form what kind of data will be accessed by the offshore depends on the feedback from GLR team

Could someone help me understand, what causes (what are the conditions) a data product Governance review to be escalated to Tier 2 Governance Approval? I tried to search any available literature on the subject, but did not have much luck. Your help in improving my understanding of the subject will be greatly appreciated. Thanks in advance.

**SDRP Support channel:** [HCP Data Platform User Group](#) | [Strategic Data Repository Platform](#) | [Microsoft Teams](#)

Global Governance Review link: <https://uhg-egrc.archerirm.us/default.aspx?IDP=cloud&requestUrl=..%2fGenericContent%2fRecord.aspx%3fid%3d26214040%26moduleld%3d735>

**David Searfass Queries:**

<https://uhgazure.sharepoint.com/teams/MRInsuranceSolutions946/Shared%20Documents/Forms/AllItems.aspx?csf=1&web=1&e=V5g1dy&CID=2a6086de%2D3208%2D4345%2D851b%2D3c47b1cfa2c8&FolderCTID=0x0120001A34A43F415A8A45A69BD796C8387B60&id=%2fTeams%2FMRInsuranceSolutions946%2FShared%20Documents%2F2023%2D4%20Proj%20Candidates%2FSmart360%2FQueries>

OCSS still pending on enabling change tracking without clear ETA  
\* Started discussion on potentially creating HCP Data Products on 4 OCSS tables as an alternative and awaiting follow-up discussion with actual data owners (CDW team)

Can you please work with Ed to subscribe to UCEE data product [UCEE-UHC Marketing Dataset v1.0](#) (DP00000690).

Below is the list of OAS team who needs to be on the Access Group.

| Name                       | Email                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------------|
| Bangale, Gaurav            | <a href="mailto:gaurav.bangale@optum.com">gaurav.bangale@optum.com</a>                       |
| Cheema, Dave               | <a href="mailto:dave.cheema@optum.com">dave.cheema@optum.com</a>                             |
| Palla, Sandeep             | <a href="mailto:sandeep.palla@optum.com">sandeep.palla@optum.com</a>                         |
| Madapati, Srikanth         | <a href="mailto:srikanth_madapati@optum.com">srikanth_madapati@optum.com</a>                 |
| Maheshwaridevi, Kodi       | <a href="mailto:kodi_maheshwaridevi@optum.com">kodi_maheshwaridevi@optum.com</a>             |
| Pal, Sujit                 | <a href="mailto:sujit.pal@optum.com">sujit.pal@optum.com</a>                                 |
| Sahiti, Ramala             | <a href="mailto:ramala_sahiti@optum.com">ramala_sahiti@optum.com</a>                         |
| Sahoo, Asit K              | <a href="mailto:asit_sahoo@optum.com">asit_sahoo@optum.com</a>                               |
| Sharma, Mudit              | <a href="mailto:mudit_sharma@optum.com">mudit_sharma@optum.com</a>                           |
| Singh, Sushmita            | <a href="mailto:sushmita.singh@optum.com">sushmita.singh@optum.com</a>                       |
| Sowjanya, Veeramallu       | <a href="mailto:veeramallu_sowjanya@optum.com">veeramallu_sowjanya@optum.com</a>             |
| Swetha, Annaram            | <a href="mailto:annaram_swetha@optum.com">annaram_swetha@optum.com</a>                       |
| Shin, John S               | <a href="mailto:john.shin@optum.com">john.shin@optum.com</a>                                 |
| Nikam, Jyoti               | <a href="mailto:jyoti.nikam@optum.com">jyoti.nikam@optum.com</a>                             |
| Boinpally, Harish          | <a href="mailto:harish_boinpally@optum.com">harish_boinpally@optum.com</a>                   |
| Byrisetti, Danababu        | <a href="mailto:byrisetti_danababu@optum.com">byrisetti_danababu@optum.com</a>               |
| Nagulapati, Veeranjaneyulu | <a href="mailto:veeranjaneyulu_nagulapati@optum.com">veeranjaneyulu_nagulapati@optum.com</a> |
| Joshi, Kamlesh             | <a href="mailto:kamlesh.joshi@optum.com">kamlesh.joshi@optum.com</a>                         |
| isdc_prd_dw                | <a href="mailto:isdc_prd_dw@optum.com">isdc_prd_dw@optum.com</a>                             |

# DB2 SMART Access

Tuesday, April 2, 2024 5:22 PM

```
pip install ibm_db
```

```
import ibm_db
```

```
conn = ibm_db.connect("DATABASE=your_database_name;HOSTNAME=your_host;PORT=your_port;PROTOCOL=TCPIP;UID=your_username;PWD=your_password;","","")
```

```
stmt = ibm_db.exec_immediate(conn, "SELECT * FROM your_table_name")
```

```
while ibm_db.fetch_row(stmt):
```

```
    # Process each row of data
```

```
    column1 = ibm_db.result(stmt, 0)
```

```
    column2 = ibm_db.result(stmt, 1)
```

```
    # ...
```

```
    print(column1, column2)
```

```
ibm_db.close(conn)
```

## 1. Installation:

- Use pip to install the ibm\_db package:

Bash

```
pip install ibm_db
```

## 2. Connection:

- Import ibm\_db in your Python script:

Python

```
import ibm_db
```

- Establish a connection using connect() or pconnect():

Python

```
connection = ibm_db.connect(
```

```
    "DATABASE=your_database;HOSTNAME=your_server;PORT=your_port;PROTOCOL=TCPIP;UID=your_username;PWD=your_password",
```

```
    "",
```

```
    "")
```

- Replace placeholders like your\_database with your actual credentials.

- connect() creates a non-persistent connection, while pconnect() creates a persistent one that remains open for reuse.

## 3. Executing Queries:

- Prepare and execute SQL statements:

Python

```
sql = "SELECT * FROM your_table"
```

```
stmt = ibm_db.prepare(connection, sql)
```

```
ibm_db.execute(stmt)
```

- Fetch results using fetch\_assoc() or other methods provided by ibm\_db.

## 4. Closing Connection:

- Always close the connection after use:

Python

```
ibm_db.close(connection)
```

## Additional Resources:

- Official Documentation: <https://www.ibm.com/docs/en/db2/11.5?topic=properties-connectionstring>
- Practical Guide: <https://www.ibm.com/docs/en/db2/11.5?topic=db-connecting-database-server>
- Stack Overflow Example: <https://stackoverflow.com/questions/68678156/how-do-i-make-a-connection-to-a-db2-database-in-python>

## Further Considerations:

- For complex projects, consider Object-Relational Mapping (ORM) tools like SQLAlchemy or Django ORM to simplify database interactions.
- Remember to secure your code by using environment variables or encrypted configuration files for storing DB2 credentials.

```
from __future__ import generators
```

```
def ResultIterator(cursor, arraysize=1000):
```

```
'iterator using fetchmany and consumes less memory'
```

```
while True:
```

```
    results = cursor.fetchmany(arraysize)
```

```
    if not results:
```

```
        break
```

```
    for result in results:
```

```
        yield result
```

```
# conn is a DB-API database connection
```

```
curs = conn.cursor()
```

```
curs.execute('select * from HUGE_TABLE')
```

```
for result in ResultIterator(curs):
```

```
    doDatascienceOnResult(result)
```

From <<https://www.ibm.com/docs/en/watson-studio-local/1.2.3?topic=practices-access-large-data>>

# Databricks to Snowflake Connectivity

Friday, August 9, 2024 9:22 AM

Steps to create Key Pair Auth:

Create Private/Public key pair by using below commands, we can use ubuntu terminal to run this as openssl will be present there or strawberry perl shell.

1. Private key : openssl genrsa 2048 | openssl pkcs8 -topk8 -v2 des3 -inform PEM -out rsa\_key.p8
2. Public key : openssl rsa -in rsa\_key.p8 -pubout -out rsa\_key.pub

Once these are available on linux terminal export them to a windows location.

Create a DWAAS git issue to modify your snowflake user to add public key.

[New Issue · optum-eeps/sdrp-support-intake \(github.com\)](https://github.com/optum-eeps/sdrp-support-intake)

GitHub

GitHub is where people build software. More than 100 million people use GitHub to discover, fork, and contribute to over 420 million projects.

+++++  
from datetime import datetime

```
from cryptography.hazmat.backends import default_backend
from cryptography.hazmat.primitives import serialization
import re
```

```
def get_private_key():
    with open(r"/dbfs/FileStore/shared_uploads/<XXX>/rsa_key.p8", "rb") as key_file:
        p_key = serialization.load_pem_private_key(key_file.read(), password=<XX>.encode(), backend=default_backend())

    pkb = p_key.private_bytes(
        encoding=serialization.Encoding.PEM,
        format=serialization.PrivateFormat.PKCS8,
        encryption_algorithm=serialization.NoEncryption(),
    )
```

```
    pkb = pkb.decode("UTF-8")
    pkb = re.sub("-*(BEGIN|END) PRIVATE KEY-*\n", "", pkb).replace("\n", "")
    return pkb
```

```
def get_snowflake_options():
    snowflake_url = "https://uhg-uhgdwaas.snowflakecomputing.com/"
    snowflake_database = "<DB>"
    snowflake_schema = "<SCHEMA>"
    snowflake_warehouse = "<WH>"
    snowflake_role = "<ROLE>"
    userId = "<GENES ID>@OPTUM.COM"
    pkb = get_private_key()
    options = {
        "sfUrl": snowflake_url,
        "sfUser": userId,
        "pem_private_key": pkb,
        "sfDatabase": snowflake_database,
        "sfSchema": snowflake_schema,
        "sfWarehouse": snowflake_warehouse,
        "sfRole": snowflake_role,
    }
    return options
```

```
def read_snowflake(query):
    snow_options = get_snowflake_options()
    print("Read from Snowflake")
    df = spark.read.format("snowflake").options(**snow_options).option("query", query).load()
    return df
```

```
if __name__ == "__main__":
    snowflake_table=<XXXX>
    query = f"select * from {snowflake_table}"
    df = read_snowflake(query)
    df.display()
```

# Global Governance Review

Saturday, August 17, 2024 4:01 PM

**Link to GR** - <https://uhg-egrc.archerirm.us/default.aspx?IDP=cloud&requestUrl=..%2fGenericContent%2fRecord.aspx%3fid%3d26214040%26moduleId%3d735>

**Link to Approval** - <https://uhg-egrc.archerirm.us/default.aspx?IDP=cloud&requestUrl=..%2fGenericContent%2fRecord.aspx%3fid%3d26214040%26moduleId%3d735>

**Link to Approved Global review:** <https://data.hcp.uhg.com/data-forge/approvals/urn:li:dfSubscription:ded20789-547e-4c30-9fe7-f48873235b0f/urn:li:taskGroup:544e1b62-32fc-4618-aece-281caf4b4eb1/mySubscriptionSummary>

FW: GR 4568 for Offshore access of Medicare Advantage data for Medicare Supplement Data Analytics and Data En...

 Ubele, Douglas J  
To: Doti, Ryan F  
Cc: Smith, Christopher B; Majorossy, Edward; Paul, Sojan K; Saripirala, Sreenadh Reddy;  
Smith, Christopher B; Cheema, Dave; Corr, Rosemary R; Sharma, Mudit  
Retention Policy: UHGINbox (90 days) Expires 11/15/2024

Sat 8/17/2024 3:19 PM

Hi Ryan.....Gurtej will be in out of office for a few weeks so if we need to meet, please set this up with myself and those cc'd. Thanks

**From:** Optum Global Governance Review <[ogl\\_review@egrc.optum.com](mailto:ogl_review@egrc.optum.com)>  
**Sent:** Friday, August 16, 2024 2:33 PM  
**To:** Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>  
**Subject:** GR 4568 for Offshore access of Medicare Advantage data for Medicare Supplement Data Analytics and Data Engineer teams has been assigned for review

**Caution: External email.** Do not open attachments or click on links if you do not recognize the sender.



## Global Governance Review Assigned for Review

This email was sent to:

GR Submitter: Singh, Gurtej  
Delegate: Majorossy, Edward G; Paul, Sojan K; Smith, Christopher B; Ubele, Douglas J  
GR Reviewer: Doti, Ryan F

Greetings Singh, Gurtej,

Your GR submission has been assigned to Doti, Ryan F for review.

### What to expect:

- Your assigned reviewer will contact you to review your submission and explain next steps.
- Your request to use global resources will be approved or denied based on the ability of the business to meet applicable global requirements or restrictions.
- The turnaround time for review varies depending upon the nature of your review, data involved, and thoroughness of documentation provided in your submission. Your reviewer will provide an estimated timeframe after reviewing your submission.

For your reference, the GR submission details are outlined below.

GR ID: [4568](#)

GR Project Name: Offshore access of Medicare Advantage data for Medicare Supplement Data Analytics and Data Engineer teams

Click the link above to check the current status of your GR request.

Select the [Global Governance Review dashboard](#) in eGRC for a list of your GRs.

If you have any further questions, feel free to contact us at [oglreview@optum.com](mailto:oglreview@optum.com) for assistance.

**Thank you for your partnership,**

The Optum Global Governance Team

GGR-02

+++++  
+++++  
+++++  
+++++

Offshoring broadly refers to the use, disclosure, storage, receipt, processing, transferring, handling or accessing of PHI to or by a person or business located outside the fifty United States and United States territories (American Samoa, Guam, Northern Marianas, Puerto Rico, and Virgin Islands). Examples of countries that would be "offshore" include Mexico, India, the Philippines and Canada. Refer to Optum Global Governance for more information

\*\*\*\*\*

#### Global Governance Review

2024 Work Segregation P+P Template.docx

<https://uhgazure.sharepoint.com/teams/optumglobalgovernance>

## Miscellaneous

Tuesday, December 26, 2023 11:52 AM

The screenshot shows a GitHub repository page for the user 'uhc-msis' named 'hsd-b'. The repository is private and has 1 file, 1 branch, and 1 tag. The 'Code' tab is selected, showing files like .github/workflows, setup.sh, .cdk, data\_model/tvx\_db, README.md, .ebextensions, and vitals.yaml. The 'About' section indicates it's a development repository for the EDP team, with 188 commits, 1 branch, 0 activity, 0 stars, 0 watching, and 0 forks. The 'Releases' section shows no releases published, with options to create a new release. The 'Packages' section shows no packages published, with an option to publish your first package. The 'Contributors' section lists 4 contributors.

https://uhgazure.sharepoint.com/sites/MRIS-OASFileShare/Shared%20Documents/Forms/AllItems.aspx?FolderCTID=0x0120006073E219D914C04581B9696ED687D816&id=%2Fteams%2F...

Mail - Bangalore, Gau... https://authgatewa... Architecture Pattern... Databricks vs Snow... Individual Performa... Story Points Revisited EDP Docs

## SharePoint

Search this library

### MRIS-OAS Collaboration

Private group | Internal – Private by invitation

Home + New Upload Edit in grid view Share Copy link Sync Add shortcut to OneDrive Download Export to Excel Automate ...

Conversations

Documents Documents > General > MRIS Documents > EDP\_DEEP > EDP > EDP Extracts Source Code > EDP-NYAPD-PLAN

Shared with us

| Name              | Modified | Modified By        |
|-------------------|----------|--------------------|
| hive              | July 7   | Gurraiz, Sheharyar |
| scripts           | July 7   | Gurraiz, Sheharyar |
| tws_nyapd_plan.sh | July 7   | Gurraiz, Sheharyar |

Notebook

Pages

Site contents

Recycle bin

Edit

```
AT display_name = $1,encoding_Display,
AT display_value = $1,encoding_Value;
AT identifier_value;
AT src_document_id;
AT src_file_id;
AT src_file_name;
--> E1_extension_AS_ENTRY_EXT;
--> E1_file_AS_ENTRY_EXT;
AT SECTION_ID;
E1 efff_time_value;
E1 efff_time_low;
E1 efff_time_high;
E1 EM_ISOM_ID;
E1 EM_ISOM_NAME;
E21_EM_ENCAPSULATING_ENCOUNTER_EFF_TIME_L0K;
E21_EM_ENCAPSULATING_ENCOUNTER_EFF_TIME_H0H;
FROM
E1;
--> E1_SECTION_ID = E1_SECTION_ID -- This is what gets in the variable
AND E1_EM_DOC_ID = E1_EM_DOC_ID;
LEFT OUTER JOIN E21
ON E1_EM_DOC_ID = E21_EM_DOC_ID;
WHERE E1_EFF_ELT_TAB = 'code';
select * from E4;
```

\*\*\*\*\* Need THE ENCODED!!!!!!  
/\*\*\*\*\* using section, document\_id & CODE\_ELT\_TAB = 'code', get interior information  
\*\*\*\*\* create or replace temporary table E4  
/\*\*\*\*\*

```

9
10      'OCOP_PRD_OPTUMCARE_CORE_DB','ECDM_L1','COMPOSITION_NOTES_DM' N
11
12      'OCOP_PRD_OPTUMCARE_CORE_DB','ECDM_L1','COMPOSITION_CODE' cc
13
14      cc.COMPOSITION_ID = N.COMPOSITION_ID
15
16      'OCOP_PRD_OPTUMCARE_CORE_DB','ECDM_L1','COMPOSITION' c
17
18      c.COMPOSITION_ID = N.COMPOSITION_ID
19
20      E2_DOCUMENT_ROOT = N_src_document_root
21
22      COALESCE(E2_DOCUMENT_EXT, '') = COALESCE(N_src_document_ext, '')
23
24      E3
25
26      E3_EM_DOC_ID = E2_EM_DOC_ID
27
28      AND E3.encoding_system = cc.encoding_system      -- **** composition code is 2.1.18.849.1.113883.4.1, E3 is LOINC, needs to be 2.1.18.849.1.113883.b.1
29      AND E3_SECTION_ID = cc.cc_section_id          -- Composition code is '101642', E3 is '10164-3'
30      AND E3_SECTION_CODE = cc.cc_section_code        -- Composition code is '101642', E3 is '10164-3'
31      AND COALESCE(E3.SECTION_EXT, '') = COALESCE(cc.identifier_value, '') -- both null
32
33      AND E3.SECTION_CODE = N_SOURCE_ID, SECTION_CODE don't need, already matched to cc.encoding_code
34
35      c.ECDM_ORIG_SUB_SAC_SYS = 'NOTES' ]-----DON'T FORGET THIS!!!!!!

```

Run All Queries | Saved 3 minutes ago

```

10
11
12  insert into util.program_list(PROCESS_NAME,DATA_FACTORY_NAME,ACTIVE_INDC) values('COMPAS_BILLING','adf-isdc-nonprod-dev','Y')
13
14  insert into util.program_list (process_name,sub_process_name,data_factory_name,object_db,object_schema,object_name)
15  values('COMPAS_BILLING','COMPAS_BILLING_T01','adf-isdc-nonprod-dev','ISOC_DEV_DM_DB','LZ_COMPAS','SP_COMPAS_BILLING_CLAIMS_RAW')
16
17  update util.program_list set object_signature=(SPIPELINE_ID, SPIPIPELINE_NAME, 'ISOC_DEV_DM_DB', 'UTIL', 'LZ_COMPAS', 'COMPAS_BILLING_RAW_DALLAS', 'compas_billing', 'DALLAS', 'UTIL_STAGE_AZURE_ISOC', 'UT'
18  process_name = 'COMPAS_BILLING'
19  sub_process_name = 'COMPAS_BILLING_T01';
20  object_db = 'ISOC_DEV_DM_DB';
21  object_schema = 'LZ_COMPAS';
22  object_name = 'SP_COMPAS_BILLING_CLAIMS_RAW';
23  delete from BILLING_PNCEFTD;
24  delete from BILLING_PNCEFTK;
25  delete from BILLING_NOC;
26  delete from BILLING_PITTS;

```

Results Data Preview

Query ID SQL 793ms 1 rows

Run All Queries | Saved 3 minutes ago

```

10
11
12  insert into util.program_list(PROCESS_NAME,DATA_FACTORY_NAME,ACTIVE_INDC) values('COMPAS_BILLING','adf-isdc-nonprod-dev','Y')
13
14  insert into util.program_list (process_name,sub_process_name,data_factory_name,object_db,object_schema,object_name)
15  values('COMPAS_BILLING','COMPAS_BILLING_T01','adf-isdc-nonprod-dev','ISOC_DEV_DM_DB','LZ_COMPAS','SP_COMPAS_BILLING_CLAIMS_RAW')
16
17  update util.program_list set object_signature=(SPIPELINE_ID, SPIPIPELINE_NAME, 'ISOC_DEV_DM_DB', 'UTIL', 'LZ_COMPAS', 'COMPAS_BILLING_RAW_DALLAS', 'compas_billing', 'DALLAS', 'UTIL_STAGE_AZURE_ISOC', 'UT'
18  process_name = 'COMPAS_BILLING'
19  sub_process_name = 'COMPAS_BILLING_T01';
20  object_db = 'ISOC_DEV_DM_DB';
21  object_schema = 'LZ_COMPAS';
22  object_name = 'SP_COMPAS_BILLING_CLAIMS_RAW';
23  delete from BILLING_PNCEFTD;
24  delete from BILLING_PNCEFTK;
25  delete from BILLING_NOC;
26  delete from BILLING_PITTS;

```

Results Data Preview

Query ID SQL 793ms 1 rows

https://app.snowflake.com/vh/rhghdwas/#/data/databases

Person Mail - Bengal Govt. → https://vaghateva... Architecture Patterns Databricks vs Snowflake Individual Performance Story Points Revisited EDP Docs

AZU\_DWS\_ISDC... UNHGDWAS

Databases

| NAME                  | SOURCE | OWNER                 | CREATED       |
|-----------------------|--------|-----------------------|---------------|
| DEMO_DB               | Local  | SYSADMIN              | 3 years ago   |
| ISOC_DEV_ISDC_DEV_DB  | Local  | AZU_DWS_SYSADMIN_ROLE | 1 month ago   |
| ISOC_DEV_TST_DM_DB    | Local  | AZU_DWS_SYSADMIN_ROLE | 1 month ago   |
| ISOC_DEV_WORK_DM_DB   | Local  | AZU_DWS_SYSADMIN_ROLE | 2 months ago  |
| SNOWFLAKE             | Share  | —                     | 3 years ago   |
| SNOWFLAKESODS         | Local  | ACCOUNTADMIN          | 11 months ago |
| SNOWFLAKE_SAMPLE_DATA | Share  | ACCOUNTADMIN          | 3 years ago   |
| UTIL_DB               | Local  | SYSADMIN              | 3 years ago   |

ADP Pipeline Pending

| A                                            | B                               | C                    | D               | E                                | F                        | G                                                                                                                        |
|----------------------------------------------|---------------------------------|----------------------|-----------------|----------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Grouping of Jobs                             | EDP Interface                   | Status               | Frequency       | Run Time (CT)                    | Job Execution Time (AVG) | Dependency                                                                                                               |
| Group I - Institutional Claims               | EDP_B37_Art_Plan                | Done                 | Daily           | 5 AM CT                          | 10-12 hours              | Dependency on B37 XML INST files                                                                                         |
| Group II - Professional Claims               | EDP_B37P_Plan                   | Done                 | Daily           | 5 AM CT                          | 10-12 hours              | Dependency on B37 XML Prof files                                                                                         |
| Group II - Downstream Extracts on Claims     | EDP_MSOP_Extract                | In Progress          | Weekly (Sunday) | 08:00 CT                         | 1.5 Hours                | Receives one file from SMART System (PUSH from SMART) on every Tuesday. Also, dependent on XML claims processed.         |
| Group III - Downstream Extracts on Claims    | EDP_Optum_Subrogation           | To be started (stop) | Weekly (Sunday) | 08:00 CT                         | 4 hours                  | Runs Sproc IMPORT to receive ISDW data (last 30 days of detail). Also, Dependent on Claims Data (PROF and INST claims)   |
| Group III - Downstream Extracts on Claims    | EDP_B37_Dam_Number_Provisioning | ADF Pipeline Pending | Daily           | 20:00 CT                         | 1 hr 13 mins             | Dependent on Claims Data (PROF and INST claims)                                                                          |
| Group III - Downstream Extracts on Claims    | EDP_PRV_PROVIDER_REPORT         | ADF Pipeline Pending | Monthly         | 1st day of the month 02:00 AM CT | 30 min                   | Dependent on Claims Data (PROF and INST claims)                                                                          |
| Group III - Downstream Extracts on Claims    | EDP_INST_Claim_Extracts         | In progress          | Daily           | 03:00 CT                         | 20 min                   | Dependent on INST Claims Data                                                                                            |
| Group III - Downstream Extracts on Claims    | EDP_INST_Claim_Extract_ECG      | In progress          | Daily           | 05:00 CT                         | 1 min                    | Depends on EDP_INST_Claim_Extracts job                                                                                   |
| Group III - Downstream Extracts on Claims    | EDP_MBI_Extract                 | To be started        | Daily           | 08:00 CT                         | 5 min                    | Dependent on Claims Data (PROF and INST claims)                                                                          |
| Group III - Downstream Extracts on Claims    | EDP_FWA_Performance             | To be started        | Monthly         | 5th day of the month 16:00 CT    | 4 hours                  | Dependent on Claims Data (PROF and INST claims)                                                                          |
| Group III - Downstream Extracts on Claims    | EDP_FWA_PROVIDERSPKE            | In progress          | Monthly         | 4th day of the month 07:00 CT    | 4 hours                  | Dependent on Claims Data (PROF and INST claims)                                                                          |
| Group III - Downstream Extracts on Claims    | EDP_B37_Crosswalk_Extract       | ADF Pipeline Pending | Monthly         | 4th day of the month 14:00 CT    | 4.5 hours                | Dependent on Claims Data (PROF and INST claims)                                                                          |
| Group III - Downstream Extracts on Claims    | EDP_PaymentIntegrity            | In Progress          | Daily           | 15:00 CT (except Saturday)       | 1.5 hours                | Dependent on the ingestion of XML files for same day.                                                                    |
| Group III - Downstream Extracts on Claims    | EDP_FWA_TAXONOMY_IMSMATCH_LOAD  | To be started        | Monthly         | 08:00 CT on SAT                  | 2 hours                  | Runs Sproc IMPORT to receive ISDW data. Also, Dependent on Claims Data (PROF and INST claims)                            |
| Group III - Downstream Extracts on Claims    | EDP_IWARD_PLAN                  | To be started        | Daily           | 08:00 CT (MON-FRI)               | 7 hours                  | File Based Target:<br>/mapr/edwstage/optum/optimizing/p_dls/proj/EDP_Conf/g_inbound/lsds/leads/vard_lead_report_complete |
| Group III - Downstream Extracts on Claims    | EDP_DUP CLAIMS_Extract          | In progress          | Daily           | 6 PM EST                         | 2 hours                  | Dependent on Same Claims Data                                                                                            |
| Group IV - Downstream Extracts (Independent) | EDP_EFFECTIVE_ERROR_DAILY       | ADF Pipeline Pending | Daily           | 08:00 CT                         | 10 min                   | Dependent on CMP_MSG_PLAN job. It reads data which is loaded by CMP_MSG_PLAN                                             |
| Group IV - Downstream Extracts (Independent) | EDP_EFFECTIVE_ERROR_MONTHLY     | ADF Pipeline Pending | Monthly         | Last day of Month 12:30 CT       | 10 min                   | Dependent on CMP_MSG_PLAN job. It reads data which is loaded by CMP_MSG_PLAN                                             |
| Group IV - Downstream Extracts (Independent) | EDP_SAVE_APP                    | In progress          | Daily           | 08:00 CT                         | 15 min                   | Dependent on CMP_MSG_PLAN job. It reads data which is loaded by CMP_MSG_PLAN                                             |
| Group IV - Downstream Extracts (Independent) | EDP_GET_CUST_PLAN               | In progress          | ...             | ...                              | 45 min                   | Dependent on CMP_MSG_PLAN job. It reads data which is loaded by CMP_MSG_PLAN                                             |



Try changing the setting 'Use Windows trust store' in Preferences->Connections and restart DBVisualizer. It might help if you haven't overridden trust store.

javax.net.ssl.SSLHandshakeException:PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target

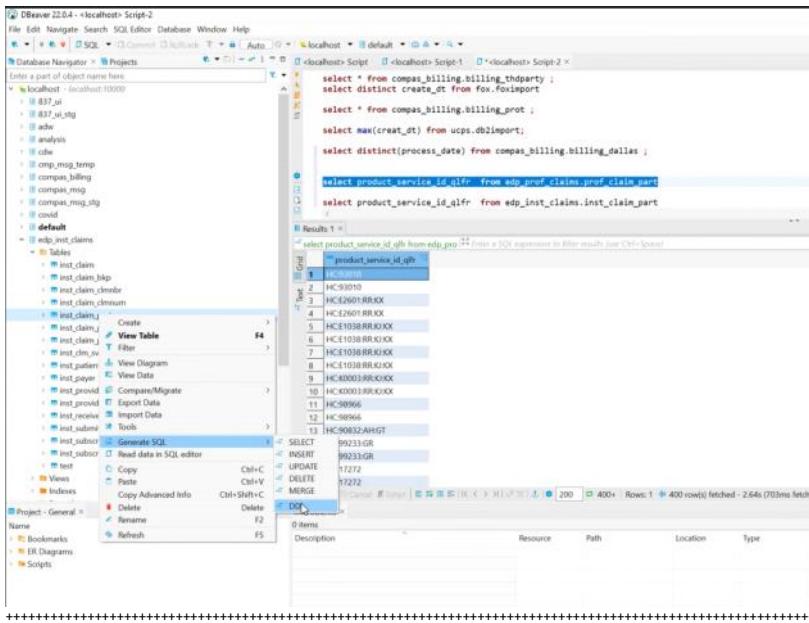
\*\*\*\*\*

```
cat datescript.sh
```

```
echo date = `date +"%Y%m%d%H%M"
```

The screenshot shows the Azure Data Factory interface with a pipeline named "SP\_UTIL\_PROGRAM\_LIST". The pipeline has three stages: "SP\_UTIL\_PROGRAM\_LIST", "SP\_UTIL\_PROGRAM\_LIST", and "SP\_UTIL\_PROGRAM\_LIST". Each stage contains a single task named "SP\_UTIL\_PROGRAM\_LIST". The pipeline is currently running, with the last successful run on 17/05/2023 at 13:31:56 PM. The pipeline ID is "A121B05\_GDC\_182C\_DK1\_INCOMING\_0001" and the run ID is "00C\_DEV\_TST\_D...". The pipeline is associated with the database "00C\_DEV\_DW\_DB" and the schema "00C\_DEV\_DW\_SCHEMA". The pipeline is triggered by a schedule.

| Row | PIPELINENAME    | SUBPROCESSNAME  | DATAFACTORYID     | OBJECT_ID     | OBJECT_TYPE | OBJECT_NAME                  | OBJECT_SIGNATURE                                           | LAST_SUCCESS | EDC_CREATED_D   | EDC_UPDATED_D   |
|-----|-----------------|-----------------|-------------------|---------------|-------------|------------------------------|------------------------------------------------------------|--------------|-----------------|-----------------|
| 75  | EDLCH_V83T...   | INST_CLAM...    | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_INST_CLAM_PART            | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2023-12-30 1... | 2023-12-30 1... |
| 76  | EDLCH_V83T...   | INST_CLM_SV...  | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_INST_DLM_SV_UPDATES       | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2023-12-30 1... | 2023-12-30 1... |
| 77  | EDLCH_V83T...   | INST_PROVIDER   | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_INST_PROVIDER             | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2023-12-30 1... | 2023-12-30 1... |
| 78  | EDLCH_V83T...   | INST_SUBSCR...  | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_INST_SUBSCRIBER           | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2023-12-30 1... | 2023-12-30 1... |
| 79  | REF_PROVIDE...  | SP_REF_PROVIDER | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_REF_PROVIDER_REPORT       | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 80  | 83T_BRIDGE_S... | 83T_BRIDGE_S... | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_83T_BRIDGE SOLUTION       | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 81  | 83T_CROSSW...   | 83T_CROSSW...   | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_83T_CROSSWALK_EXTRACT     | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 82  | 83T_CLAM...     | INST_CLAM...    | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_83T_CLAM_EXTRACT          | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 83  | 83T_CLAM_N...   | LOAD_INCT...    | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_LOAD_PCT_CLAM_CLNUM       | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 84  | 83T_CLAM_N...   | LOAD_PROF...    | adft-intx-norp... | 00C_DEV_DW_DB | SRC_EDLJ83T | SP_LOAD_PROF_CLAM_CLNUM      | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 85  | COMP_BILLING... | FWDIMPORT       | adft-intx-norp... | 00C_DEV_DW_DB | SRC_FOX     | SP_FWDIMPORT                 | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 86  | COMP_BILLING... | FWDIMPORT       | adft-intx-norp... | 00C_DEV_DW_DB | UTL         | SP_COPY_CIN_PRIM_DATA        | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | 17/03/01-01  | 2024-01-01 1... | 2024-01-01 1... |
| 87  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAIME_RAW | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2023-12-27 1... | 2023-12-27 1... |
| 88  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAIME_RAW | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2023-12-28 0... | 2023-12-28 0... |
| 89  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAMS_RAW  | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2024-01-02 0... | 2024-01-02 0... |
| 90  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAMS_RAW  | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2024-01-02 0... | 2024-01-02 0... |
| 91  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAMS_RAW  | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2024-01-02 0... | 2024-01-02 0... |
| 92  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAMS_RAW  | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2024-01-02 0... | 2024-01-02 0... |
| 93  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAML_RAW  | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2024-01-02 0... | 2024-01-02 0... |
| 94  | COMPAS_BILL...  | COMPAS_BILL...  | adft-intx-norp... | 00C_DEV_DW_DB | LZ_COMPAS   | SP_COMPAS_BILLING_CLAMS_RAW  | 1SPPIPELINE_0, SPPIPELINE_NAME_00C_DEV_DW_DB, UTN_0, SR_0, | NUL          | 2024-01-02 0... | 2024-01-02 0... |



```

File Name: View_Help
/uaspr/datalake/optum/optimusInsight/d_diz/tst/developer/acopy/acopy_linux_amd64_10.14.1/acopy copy "/uaspr/datalake/optum/optimusInsight/d_diz/dev/EDP_Cons/d_hdfs/Enriched/warehouse/claims/prof/prof_claim"
"https://sqlcdnprod.blob.core.windows.net/idxk/dev/legacy/?sp=write&t=2024-01-03T05:08:25Z&se=2024-01-03T13:08:25Z&sr=https&sv=2022-11-07&sig=IDPfJHrBAXS289C4DpaXZFrutyAxpxpKu0mQh5CK02cTY%30" --recursively

Acopy copy "directory on local computer" "<storage_account_name>.blob.core.windows.net/<containername>/directoryname?<SAS token>" --recursive

ClaimPart
ROW FORMAT SERDE
    'org.apache.hadoop.hive.serde2.lazy.LazySimpleSerDe'
STORED AS INPUTFORMAT
    'org.apache.hadoop.mapred.TextInputFormat'
OUTPUTFORMAT
    'org.apache.hadoop.hive.ql.io.HiveIgnoreKeyTextOutputFormat'
LOCATION
    'maprfs://datalake/optum/optimusInsight/d_diz/dev/EDP_Cons/d_hdfs/Enriched/warehouse/claims/prof/prof_claim/_part'
TBLOPROPERTIES (
    'last_modified_by'='atip40',
    'last_modified_time'='1649239885',
    'transient_lastDeltTime'='1649239885');

FoxExport
ROW FORMAT SERDE
    'org.apache.hadoop.hive.serde2.lazy.LazySimpleSerDe'
WITH SERDEPROPERTIES(
    'field.delim'='|')
STORED AS INPUTFORMAT
    'org.apache.hadoop.mapred.TextInputFormat'
OUTPUTFORMAT
    'org.apache.hadoop.hive.ql.io.HiveIgnoreKeyTextOutputFormat'
LOCATION
    'maprfs://datalake/optum/optimusInsight/d_diz/dev/EDP_Cons/d_hdfs/Enriched/warehouse/claims/fox/foximport'
TBLOPROPERTIES (
    'last_modified_by'='atip40',
    'last_modified_time'='1655998712',
    'transient_lastDeltTime'='1655998712');

*****+
Can't find
"/mapr/datalake/optum/optimusInsight/d_diz/dev/EDP_Cons/d_hdfs/Enriched/warehouse/claims/prof/prof_claim"

```

```
Can't find resource group: isdc: https://saisdconprod.blob.core.windows.net  
Also, need SAS token. Can I generate them myself or you guys will provide them?  
Azcopy copy "<directory on local computer>" "<storage_account_name>.blob.core.windows.net/<containername>/<directoryname>?<SA S token>" --recursive  
  
azcopy copy "C:\local\path" "https://account.blob.core.windows.net/mycontainer1/?sv=2018-03-28&ss=biqt&srt=sco&sp=rwddgcup&se=2019-05-01T05:01:17Z&st=2019-04-30T21:01:17Z&spr=https&sig=MGCXivzb7ttrk3ewJlh2AR8KrgHv1DGMyoN734bQF4%3D" --recursive=true
```

When there are no field delimiter specified, as shown above, what do you do?

How do you specify field delimiter in the Azcopy command?  
Which schemas to copy? -work-schema

Which schemas to copy? - work\_schema

```

Job 380ccc76-0a20-694b-7711-df8735d31396 has started
Log file is located at: /home/dcheema/.azcopy/380ccc76-0a20-694b-7711-df8735d31396.log

INFO: azcopy: A newer version 10.22.2 is available to download

INFO: Authentication failed, it is either not correct, or expired, or does not have the correct permission -> github.com/Azure/azure-storage-blob-go/azblob.newStorageError, /home/vsts/go/pkg/mod/github.com/azure/azure-storage-blob-go@v0.13.1-0-20210914164749-2d6cd3e07548/azblob/zc_storage_error.go:42
===== RESPONSE ERROR (ServiceCode=AuthorizationPermissionMismatch) =====
Description=This request is not authorized to perform this operation using this permission.
RequestId:70603232-201e-00c8-70f2-438d5d000000
Time:2024-01-10T18:28:51.9428475Z, Details:
  Code: AuthorizationPermissionMismatch
    PUT https://saisdcnprod.blob.core.windows.net/isdc/dev/legacy/dev/dc_dev/pr
  of claim/part/transactionSet create date=20220909/000003 02blockId=njg3y2hrzjgtnwyzslyhyrlltzlnwiyhny4mmmodm&comp=block&ssd=2&ise=2024-01-31t13:3A19%3A50z&sig=REDACTED-&sp=r&sr=d&st=2024-01-10t05%3A19%3A50z&sv=2022-11-02&time
  out=901
  Content-Length: [929571]
  User-Agent: [AzCopy/10.14.1 Azure-Storage/0.14 (go1.16.14; linux)]
  X-Ms-Client-Request-Id: [98daba54-522f-467f-79e7-851f7f628db0]
  X-Ms-Version: [2020-04-08]

  ---
  RESPONSE Status: 403 This request is not authorized to perform this operation using this permission.
  Content-Length: [279]
  Content-Type: [application/xml]
  Date: [Wed, 10 Jan 2024 18:28:51 GMT]
  Server: [Windows-Azure-Blob/1.0 Microsoft-HTTPAPI/2.0]
  X-Ms-Client-Request-Id: [98daba54-522f-467f-79e7-851f7f628db0]
  X-Ms-Error-Code: [AuthorizationPermissionMismatch]
  X-Ms-Request-Id: [70603232-201e-00c8-70f2-438d5d000000]
  X-Ms-Version: [2020-04-08]

  ---

  0.0 %, 0 Done, 0 Failed, 146 Pending, 0 Skipped, 146 Total,
```

Job 380ccc76-0a20-694b-7711-df8735d31396 summary

Elapsed Time (Minutes): 0.0333  
Number of File Transfers: 146  
Number of Folder Property Transfers: 0  
Total Number of Transfers: 146  
Number of Transfers Completed: 0

## OAS support for EDP migration: 2024 Projects for Proposal

From the remaining phases outlined in the MRIS Cloud Data Strategy roadmap, 5 efforts (excluding SMART ETL Migration) will be bundled together into a 2024 MRIS Modernization Program Initiative. To support effective delivery execution across the initiative, a program delivery management team will lead the PI planning for each project. The major milestones and key outcomes for each project (from roadmap) are highlighted below:

| Program Delivery Management Team (Core Team)                                                                                                                                                                                                                                                                                                                                 |                            |                  |                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------|---------------------------------|
| Key Roles:                                                                                                                                                                                                                                                                                                                                                                   |                            |                  |                                 |
| - Project Solution & Delivery Leader                                                                                                                                                                                                                                                                                                                                         | - Cloud Platform Architect | - Technical Lead | - CM Assessment & Planning Lead |
| Key Outcomes:                                                                                                                                                                                                                                                                                                                                                                |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>Program increment planning &amp; refresh for all projects capturing and outlining the "true" work to be done on current projects in sufficient detail early as possible</li> <li>Change management &amp; readiness plan outlining impacted stakeholders, relevant action items for change, and coordinated plan for change</li> </ul> |                            |                  |                                 |
| <b>1 MRIS Data Procurement</b>                                                                                                                                                                                                                                                                                                                                               |                            |                  |                                 |
| Program Management Milestones:                                                                                                                                                                                                                                                                                                                                               |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>PI Planning: Feb 1, 2024 → Feb 2, 2024</li> <li>PI Preparation: Feb 8, 2024 → Mar 1, 2024</li> <li>Project Duration: Feb 8, 2024 → May 24, 2024 (19w)</li> </ul>                                                                                                                                                                      |                            |                  |                                 |
| Key Outcomes:                                                                                                                                                                                                                                                                                                                                                                |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>Automate data sources across the assets to eliminate redundant data sourcing</li> <li>Uniquely source data from SDW-ODS and DEEP and move into the source data repository layer of the Insurance Solutions Data Cloud (ISDC) on SDRP</li> </ul>                                                                                       |                            |                  |                                 |
| <b>2 MRIS SMART &amp; ISDW-ODS Data Replication</b>                                                                                                                                                                                                                                                                                                                          |                            |                  |                                 |
| Program Management Milestones:                                                                                                                                                                                                                                                                                                                                               |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>PI Planning: Feb 19, 2024 → Mar 1, 2024</li> <li>PI Preparation: Mar 4, 2024 → Mar 19, 2024</li> <li>Project Duration: Mar 4, 2024 → May 24, 2024 (12w)</li> </ul>                                                                                                                                                                    |                            |                  |                                 |
| Key Outcomes:                                                                                                                                                                                                                                                                                                                                                                |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>MRIS SMART data will be replicated on-going from current DB2 database to base data layer of ISDC</li> <li>current ISDW-ODS data will be replicated on-going from the current Oracle Exadata database to base data layer of ISDC</li> </ul>                                                                                            |                            |                  |                                 |
| <b>3 MRIS ISDW-ODS ETL Migration</b>                                                                                                                                                                                                                                                                                                                                         |                            |                  |                                 |
| Program Management Milestones:                                                                                                                                                                                                                                                                                                                                               |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>PI Planning: May 1, 2024 → May 24, 2024</li> <li>PI Preparation: May 8, 2024 → May 28, 2024</li> <li>Project Duration: May 27, 2024 → Oct 6, 2024 (28w)</li> </ul>                                                                                                                                                                    |                            |                  |                                 |
| Key Outcomes:                                                                                                                                                                                                                                                                                                                                                                |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>Automation enabled conversion of existing Informatica jobs to ADP + Snowflake based data pipelines</li> <li>Conversion of existing Informatica jobs to ADP to facilitate the start of Production Acceptance Testing and subsequent decommission of Oracle NetApp</li> </ul>                                                           |                            |                  |                                 |
| <b>4 MRIS DEEP Migration</b>                                                                                                                                                                                                                                                                                                                                                 |                            |                  |                                 |
| Program Management Milestones:                                                                                                                                                                                                                                                                                                                                               |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>PI Planning: May 1, 2024 → May 24, 2024</li> <li>PI Preparation: May 8, 2024 → May 28, 2024</li> <li>Project Duration: May 27, 2024 → Sep 13, 2024 (28w)</li> </ul>                                                                                                                                                                   |                            |                  |                                 |
| Key Outcomes:                                                                                                                                                                                                                                                                                                                                                                |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>Migration of current data warehouse analysis</li> <li>Migration of current data warehouse metrics</li> <li>Complete migration of DEEP to the ISDC to facilitate the start of Production Acceptance Testing and subsequent decommission of DEEP legacy</li> </ul>                                                                      |                            |                  |                                 |
| <b>5 BI Impact Assessment &amp; Remediation</b>                                                                                                                                                                                                                                                                                                                              |                            |                  |                                 |
| Program Management Milestones:                                                                                                                                                                                                                                                                                                                                               |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>PI Planning: May 1, 2024 → May 24, 2024</li> <li>PI Preparation: May 27, 2024 → June 21, 2024</li> <li>Project Duration: May 27, 2024 → Dec 6, 2024 (28w)</li> </ul>                                                                                                                                                                  |                            |                  |                                 |
| Key Outcomes:                                                                                                                                                                                                                                                                                                                                                                |                            |                  |                                 |
| <ul style="list-style-type: none"> <li>Program increment planning &amp; refresh for all projects capturing and outlining the "true" work to be done on current projects in sufficient detail early as possible</li> <li>Change management &amp; readiness plan outlining impacted stakeholders, relevant action items for change, and coordinated plan for change</li> </ul> |                            |                  |                                 |

```

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2

Bash
#!/bin/bash

# Declare variables for parameters
source_url="$1"
destination_url="$2"
additional_args="$3"

# Validate parameters
if [[ -z "$source_url" || -z "$destination_url" ]]; then
  echo "Error: Please provide both source and destination URLs."
  exit 1
fi

# Connect to the server using PuTTY
#putty -ssh user@hostname -pw password << EOF
putty -ssh dcheema@rn000057812.uhc.com -pw ToasterIs13YearsOld << EOF

# Execute the azcopy command with parameters
/map/datalake/optuminsight/t_diz/tst/developer/azcopy/azcopy_linux_amd64_10.14.1/azcopy copy $source_url $destination_url --recursive=true

exit: exit [1]
Both Source_url and destination_url are quired.

EOF

```

```

=====
https://learn.microsoft.com/en-us/azure/storage/common/storage-use-azcopy-optimize
=====
#!/usr/bin/bash

file=temp.txt
while read -r line;
do
echo $line
done < "$file"
=====
#!/bin/bash

```

```

# Read the JSON file
json=$(cat data.json)

# Parse the JSON using jq
result=$(echo "$json" | jq '.')

# Output the result
echo "$result"
+++++
#!/bin/bash

# Read the JSON file
while IFS= read -r line
do
    # Process each line of the JSON file
    echo "$line"
done < file.json
+++++
azcopy copy 'C:\myDirectory' '' --include-path 'photos/documents/myFile.txt' --preserve-smb-permissions=true --preserve-smb-info=true
+++++
if \[ -z "\$my\_var" \]
then
    echo "\\$my\_var is NULL"
else
    echo "\\$my\_var is NOT NULL"
fi
+++++
jq -n '\[inputs | arrays\[\]\].json'
jq -n
Use select\(. != null\) instead of arrays if you don't want to exclude all non-arrays but only null.
+++++
++++

To merge multiple JSON files without comments using a shell script, you can use the `jq` command-line tool along with other shell commands like `cat` and `grep`. Here's an example shell script that achieves this:

```bash
#!/bin/bash

output\_file="merged.json"

# Remove comments from JSON files using grep
remove\_comments\(\) {
    grep -v '^\[\s\t\]\*//.\*' "\$1" | grep -v '^\[\s\t\]\*/\*' | grep -v '^\[\s\t\]\*/\*/' | grep -v '^\[\s\t\]\*#'
}

# Merge JSON files using jq
merge\_json\(\) {
    jq -s '@' "\$output\_file"
}

# Get all JSON files in the current directory
json\_files=\$\(ls -1 \*.json 2>/dev/null\)

if \[ -z "\$json\_files" \]; then
    echo "No JSON files found."
    exit 1
fi

# Merge JSON files without comments
remove\_comments\_files=\(\)
for file in \$json\_files; do
    remove\_comments\_file=\$\(remove\_comments "\$file"\)
    remove\_comments\_files+=\("\$remove\_comments\_file"\)
done

merge\_json "\${remove\_comments\_files\[@\]}"

echo "Merged JSON files without comments into \$output\_file"
```

To use this script, save it into a file \(e.g., `merge\_json.sh`\), make it executable \(`chmod +x merge\_json.sh`\), and run it in the directory where your JSON files are located.

The script first defines a function `remove\_comments` that removes comments from a JSON file using `grep`. It then defines an other function `merge\_json` that merges JSON files using `jq`.

The script retrieves all JSON files in the current directory and loops through them, removing comments from each file using `remove\_comments` and storing the result in an array. Finally, it calls `merge\_json` with the files without comments and saves the merged output into a file named `merged.json`.

Note: This script assumes that the JSON files do not contain nested comments, and it removes both single-line \('//'\) and multi-line \('/\* \*/'\) comments.
+++++
1. Get a list of candidate tables
2. Get Location URL of each table
3. Create JSON file by schema
4. Create JSON entry for each URL in the JSON file
5. Develop a utility UNIX SHELL script that read all JSON files
    a. Read all URLs within each JSON file
    b. Execute AZCopy utility using source URL and destination URL \(Note: destination URL must contain appropriate SAS key\)
6. Since AZCopy does not identify if a transfer completely or partially failed, there are some instances where a URL transfer is skipped or partial data is loaded
7. Match destination, in the Azure Blob storage, folders to the source Location file name.
8. Make a note of missing files.
9. Create another DataTransferUtility\_SpecialCases.sh
    a. Enter all the missing URLs in the data\_sources list
    b. Execute AZCopy utility using source URL and destination URL along with the specified parameters
10. If a file is only partially loaded, remove the destination folder and try it again
+++++

```

Your status is set to do not disturb. You'll only get notifications for urgent messages and invites.

General Post Files Notes +

+ New Upload Share Copy link Sync Add shortcut to OneDrive Download Open in SharePoint ...

Documents > General > 01 MRIS Data Procurement > 03 Requirements, Development Specs

Name Modified Modified By + Add columns

This folder is empty

## SECURE

MY ACCESS OTHERS ACCESS ACCESS SUPPORT

**Request Type: Change Access**

UnitedHealth Group is committed to protecting protected health information (PHI) including employee benefit plan data in its systems. Prior to submitting this request, view company policies on [Minimum Necessary Requirements](#).

**Request For:** Platform

Platform: MS

Environment: Prod

Resource: MS

User ID: dcheema

Group(s):

You may request up to 25 groups (optional)

Search groups by group name:    Wildcard

\*\* Denotes that a group is privileged.

| Available Groups | Selected Groups    |
|------------------|--------------------|
| No groups found  | No groups selected |

## SECURE

MY ACCESS OTHERS ACCESS ACCESS SUPPORT

**Request Type: Change Access**

UnitedHealth Group is committed to protecting protected health information (PHI) including employee benefit plan data in its systems. Prior to submitting this request, view company policies on [Minimum Necessary Requirements](#).

**Request For:** Platform

Platform: MS

Environment: Prod

Resource: MS

User ID: dcheema

Group(s):

You may request up to 25 groups (optional)

Search groups by group name:    Wildcard

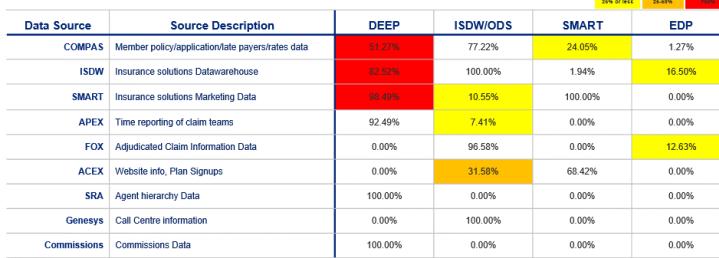
\*\* Denotes that a group is privileged.

| Available Groups | Selected Groups    |
|------------------|--------------------|
| No groups found  | No groups selected |

## Current State Data Overlap Across Platforms

The duplication of data across MRIS platforms on-premises is happening largely due to inefficiencies related to sharing data on-premises. Major example of this is seen with DEEP and the physical replication ISDW and SMART data.

In the cloud, this replication of data can be eliminated by enabling all use cases across the MRIS platforms in a unified platform that can scale and handle multiple workloads concurrently without physical constraints.



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8

**Task:** Santosh and Dave to setup containers and folders

### Create a group of users

Add Dave and Santosh to this user group

## Create a target storage account

Assign the following set of permissions to this user group

### Storage account level - Reader

## Storage Blob Data Contributor

Storage Blob Rea

Design folder structure

lsdw\_ods  
tdb

Isdw  
Qdz

00

Would you also like folders listed below for the following data sources under these folders:

COMPAS

ISDW

ISSN  
SMART

SMART  
APEX

AFLA  
EON

ACEY

ACEX  
CBA

SRA

Genesys

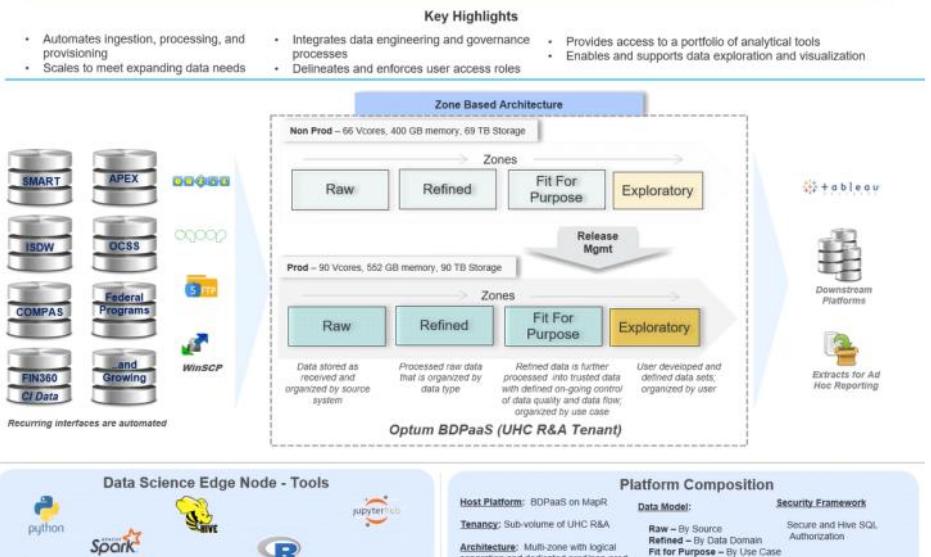
## Commissions

Informatica CPC discovery of available features to push to cloud

Azure SQL / SQL Server Change Stream with Debezium

| Data source                                | Type of database/Source                              | Comments                          |
|--------------------------------------------|------------------------------------------------------|-----------------------------------|
| ISDW                                       | Oracle                                               | Sqoop                             |
| COMPAS                                     | Oracle                                               | Sqoop                             |
| APEX                                       | Oracle                                               | Sqoop                             |
| SMART                                      | DB2                                                  | Sqoop                             |
| COMMISSIONS                                | SQL server                                           | Sqoop                             |
| SRA                                        | SQL server                                           | Sqoop                             |
| UCEE                                       | BDpaaS server - AES tenant 3                         |                                   |
| FIN360                                     | sasfusion.uhc.com via ECG                            |                                   |
| CMS Website                                | <a href="https://cms.gov/">https://cms.gov/</a>      |                                   |
| C360 team                                  | C360 team sends call files via ECG                   |                                   |
| Multiple vendors(inside & outside the org) | Multiple sources like outlook/secured URLs/sasfusion | Analytics Partner quarterly files |
| Snowflake                                  | Snowflake                                            | Clickstream data, Transcript data |
| ECM(Enterprise Content Management)         | comes via ECG                                        |                                   |

## Data SciencE Enablement Platform (DEEP)



### Version control branching strategy:

Approach:

- Developers work on Feature Branches.
- Once a developer commits code to Feature Branch the objects will be deployed to Dev DB. (AND TEST DB)
- This way all the changes in DEV are in sync with Test,
- Release: All the branches to be merged one by one into main with approval from SME.
- If there are any pull outs then the object creation has to be reverted. in DEV and TEST as well ..

Versioning(schema Change):

- Developer to check the max of version number from change\_history table of the schema,
- In the filename put the initials like V1.5\_\_subrogationtables\_GB.sql
- In case the

Capture on-prem CDC and send it to cloud

**Informatica CDC Discovery**

- Understand HCP CDC Tooling (tech stack, infrastructure, cost, operations model)
- Determine if HCP CDC is a viable alternative based on impact assessment vs Informatica
- Informatica CDC discovery of available features to push to cloud

**What are the different types of CDC in Informatica?**

- Three common methods are **timestamps**, **triggers**, and **log based CDC**.
- Timestamps . Timestamps in a dedicated source table column can record the time of the most recent update. ...
  - Triggers
  - Log based CDC

**What is Informatica power exchange used for?**

- PowerExchange Change Data Capture (CDC) works in conjunction with PowerCenter® to capture changes to data in source tables and replicate those changes to target tables or files
- PowerExchange can capture change data from DB2 for i5/OS journal receivers in near real time. If you use the optional PowerExchange Condense feature.
- The targets can be on the **same system** as the source or on a **different system**.

**You can use CDC to:**

- Maintain a subset of the source data on a target
- Maintain an exact duplicate of the source.
- Update a data warehouse.
- Quickly apply changes to a target after source data is updated to meet specific business or application requirements.
- Apply changes to a target at **specific intervals** to meet a business requirement such as data cleansing or translation.

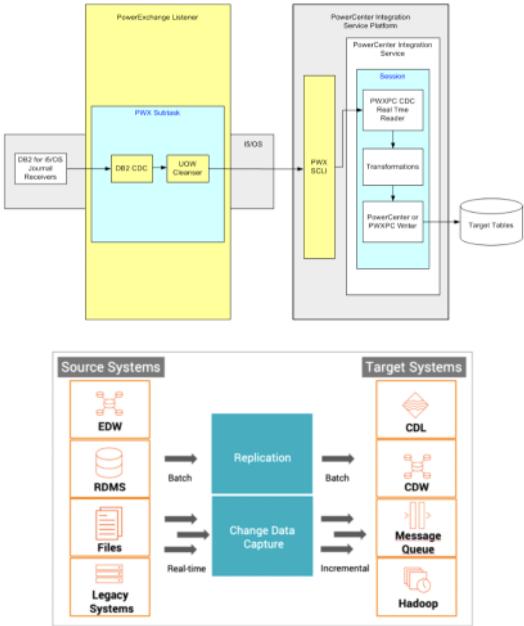


Figure 1: Change data capture is depicted as a component of traditional database synchronization in this diagram

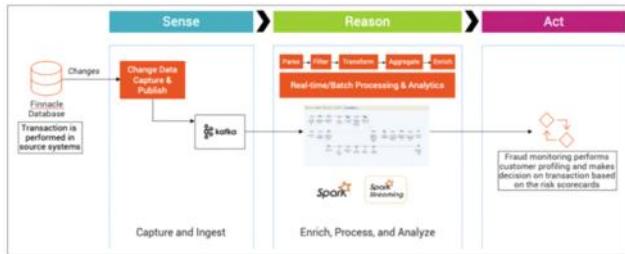


Figure 2: Change data capture is a key part of real-time fraud detection in this reference architecture diagram

- **Connect to your database.** Use a SQL client or the SQL\*Plus command-line tool.
- **Identify the table.** What's the name and owner?
- **Run a query:** `SELECT DBMS_METADATA.GET_DDL('TABLE', 'table_name', 'owner') FROM DUAL;` Don't forget to replace "table\_name" and "owner".
- **Execute the query.** Press enter or use an execute command.
- **View and analyze results.** You'll get the DDL statement with columns, constraints, indexes, and triggers.

Remember to check privileges for metadata and the procedure.

An example of practical usage: A **senior database admin** needed to refresh a test environment. Instead of creating tables from scratch, he used Oracle's `DBMS_METADATA.GET_DDL` to get DDL statements from production. He replicated the whole schema quickly and easily.

## Step-by-Step Guide: Getting DDL of a Table in Oracle

Getting the **Data Definition Language (DDL)** of a table in Oracle is easy. Here's how:

- First, connect to the Oracle database using your preferred client tool.
- Then, locate the relevant schema and find the table name.
- Next, execute SQL statement: `SELECT dbms_metadata.get_ddl('TABLE', 'TABLE_NAME', 'SCHEMA_NAME') FROM dual;`
- Replace 'TABLE\_NAME' and 'SCHEMA\_NAME' with the actual names.
- Review the DDL.
- If you want to save it, copy and paste it into a text editor or use your preferred method.
- Finally, disconnect from the Oracle Database.

Also, Oracle provides lots of documentation on their website about managing database objects.

Here's a true story: A colleague of mine was working on a database migration project. They had to replicate a table structure, but weren't sure about the DDL. After a lot of research and trials, they found the above-mentioned method and got the DDL quickly, saving them time and effort

```
select table_name from all_tables where owner = 'CDC_FOX_APP'; --this query works
```

```
SELECT dbms_metadata.get_ddl('TABLE', 'STG_CLM_HIST', 'CDC_FOX_APP') FROM dual; -- this query does not work due to lack of permissions.
```

SQLPLUS is an Oracle provided utility to generate DDLs.

```
=====
Network error
```

Reason:

Network unavailable due to certificate issue.

Try changing the setting 'Use Windows trust store' in Preferences->Connections and restart DBeaver. It might help if you haven't overridden trust store.

```
javaw.net.ssl.SSLHandshakeException:PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: un able to find valid certification path to requested target
```

Network unavailable due to certificate issue.

Try changing the setting 'Use Windows trust store' in Preferences->Connections and restart DBeaver. It might help if you haven't overridden trust store.

```
javaw.net.ssl.SSLHandshakeException:PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: un able to find valid certification path to requested target
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```
javaw.net.ssl.SSLHandshakeException:PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: un able to find valid certification path to requested target
```

+++++  
Qlik:  
<https://www.qlik.com/us/products/qlik-replicate>

like 1  
Qlik Replicate: Data Ingestion & Data Replication Solutions

Accelerate data replication, ingestion, & data streaming for the widest range of data sources & targets with Qlik Replicate. Explore data replication solutions.

Seems like Qlik provides lots of potential for replicating data to snowflake....

This may be a good option for the SMART & ISDW-ODS Data Replication as well

Cheema, Dave Dave, can you meet with the HCP team that supports this tooling and get an understanding of what limits they are placing on the tool versus what it can truly do?  
+++++

#### Great reference material for data analytics:

A great site to catch-up on OR looks for specific best practices for Snowflake. RECOMMEND YOU BOOKMARK AND READ OR LOOK-UP TOPICS AS APPROPRIATE.

<https://www.analytics.today/>

Analytics.Today

<https://www.analytics.today/blog/top-14-snowflake-data-engineering-best-practices>

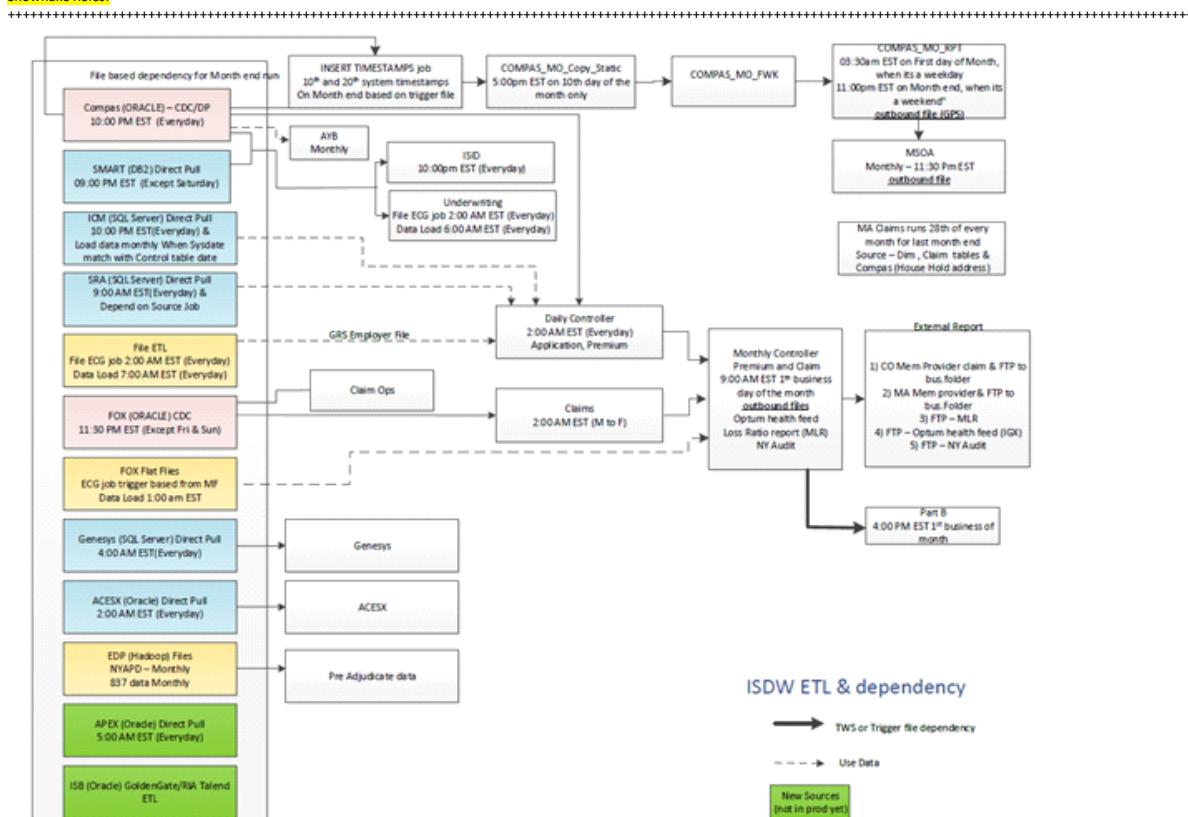
Top 14 Snowflake Best Practices for Data Engineers — Analytics.Today

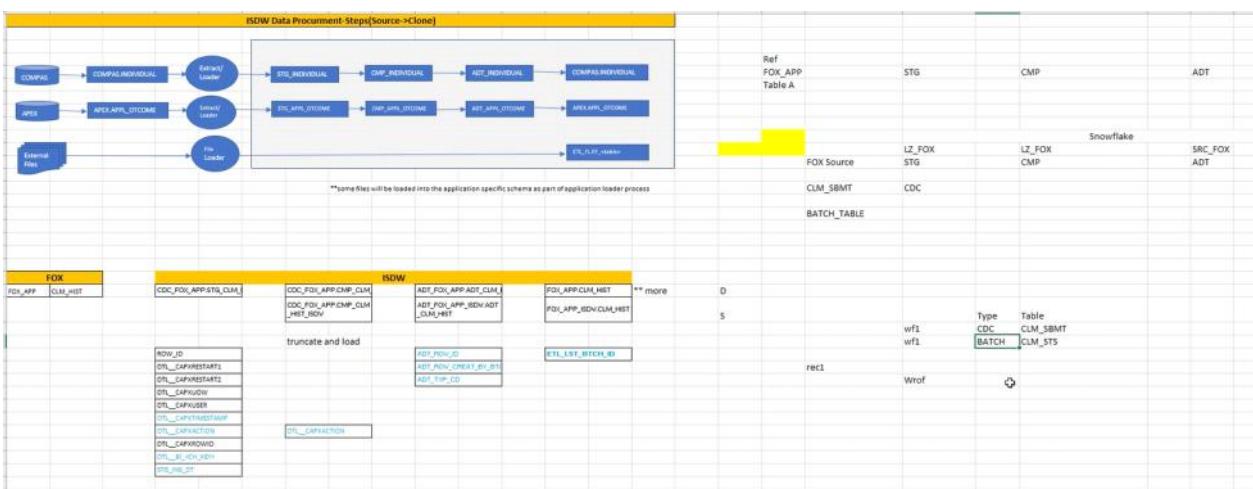
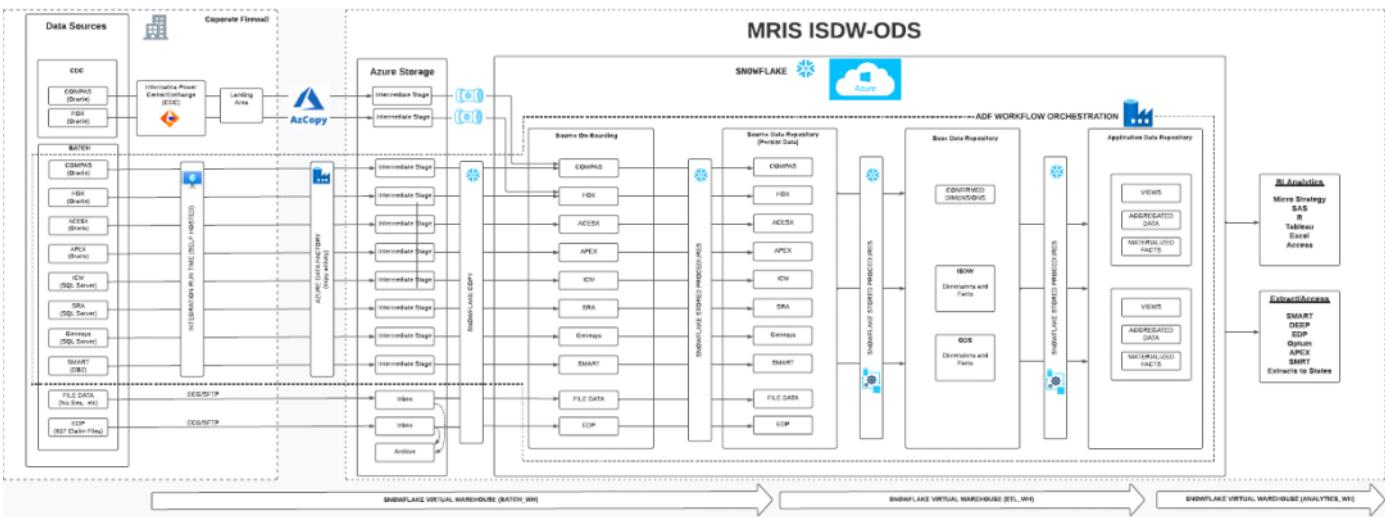
What are the Snowflake Best Practices for Data Engineering including Transformation, ETL and a Data Lake? Read about it here.  
+++++

#### Snowflake Warehouses:

| OCDP_PRD_DATA_LOAD_128_WH                                                    | OCDP_PRD_DATA_LOAD_64_WH                                                     | OCDP_PRD_DATA_LOAD_32_WH                                                     |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Status: Started                                                              | Status: Started                                                              | Status: Started                                                              |
| Size: Large                                                                  | Size: Medium                                                                 | Size: Small                                                                  |
| Min cluster count: 1                                                         | Min cluster count: 1                                                         | Min cluster count: 1                                                         |
| Max cluster count: 5                                                         | Max cluster count: 5                                                         | Max cluster count: 5                                                         |
| Scaling policy: STANDARD                                                     | Scaling policy: STANDARD                                                     | Scaling policy: STANDARD                                                     |
| Auto suspend: 60 seconds                                                     | Auto suspend: 60 seconds                                                     | Auto suspend: 60 seconds                                                     |
| Auto resume: Enabled                                                         | Auto resume: Enabled                                                         | Auto resume: Enabled                                                         |
| Comment: SPECIAL APPROVAL REQUIRED WAREHOUSE USED FOR LOADING DATA (ETL/ELT) | Comment: SPECIAL APPROVAL REQUIRED WAREHOUSE USED FOR LOADING DATA (ETL/ELT) | Comment: SPECIAL APPROVAL REQUIRED WAREHOUSE USED FOR LOADING DATA (ETL/ELT) |

#### Snowflake Roles:





### INFORMATICA SNOWFLAKE ODBC data inserting speed

I'm trying to insert data into Snowflake table using Informatica Powcenter and Snowflake ODBC driver. The **average throughput is 150 Kbytes/sec** over the public Internet.  
I would appreciate any hints, how to improve the data flow performance.

**Snowflake:** Given that you are concerned with throughput, I would "strongly" suggest that you NOT use INSERT to load data into Snowflake tables... instead, you should **upload the data in a file/object** (in S3 for AWS; in Blob Storage for Azure), and then use a **COPY INTO** to pull the file contents into Snowflake. Using COPY INTO is definitely a best practice.

If you still have questions on this, please provide more context such as number of rows being loaded, frequency of load, etc.

#### Dmitry

Thank you for the suggestions! Our case has implemented CDC technique on the source Mainframe, so we want to provide transaction control over Dataflow: Mainframe->Informatica Powcenter->Snowflake. This Dataflow tends to be rather a real-time process than a batch.

When the workflow is running, it inserts about 100 rows/sec, each row ~2Kb. As I have got from the history, driver inserts 10.0 rows with one INSERT command. If the dataflow contains more rows, it is splitted by the 60-100 rows chunks... and each chunk (i.e. INSERT sql command) takes ~1 sec to process.

#### Kishore Nuthakki

Hi , can someone suggest how to improve performance when loading data through ODBC ?

We are using informatica Snowflake connector to load data ,and for Target we are using ODBC...It is loading 60 records per second, like someone mentioned in above thread.

How to increase the throughput ? any settings that we need to change to increase the rows per second ?

Appreciate your inputs here.

+++++  
Situation: On-prem CDC data needs to be migrated to the Snowflake database in the Azure cloud

Suggested approach: use ODBC driver to make direct inserts into Snowflake target tables

However, there seems to be a bit of uneasiness in the MRIS leadership about this approach

OAS also wanted to ensure that whatever approach we adopt must work to handle the data volume, at the expected speed

Upon further investigation, OAS learned that the insert speed is an issue - too slow!

Considering data volume (120M CDCs/day), this approach won't be able to meet our needs

The Snowflake recommended solution is **upload the data in a file/object to the Azure Blob, and then use a COPY INTO to pull the file contents into Snowflake**. Using COPY INTO is definitely a **best practice**.

But, before we adopt this Snowflake recommended approach, we need to understand the current MRIS Informatica CDC process at a little more detailed level.

We would like to understand the following:

1. Where CDCs are stored,
2. How are the deltas identified
3. How are the deltas migrated to the target environment

+++++  
On every CDC STG\_table there is below columns.

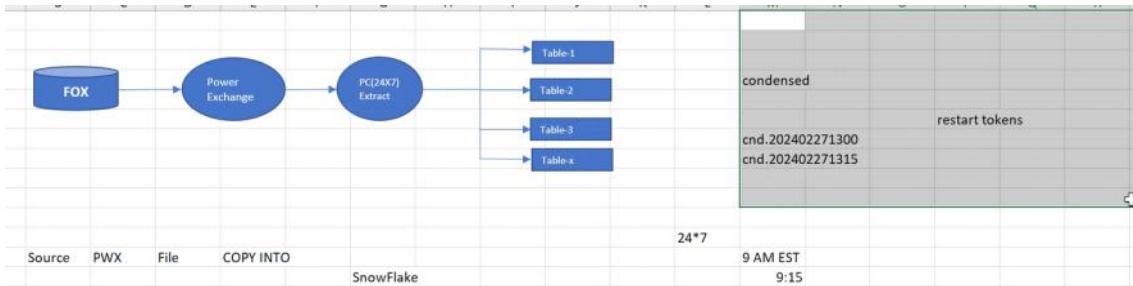
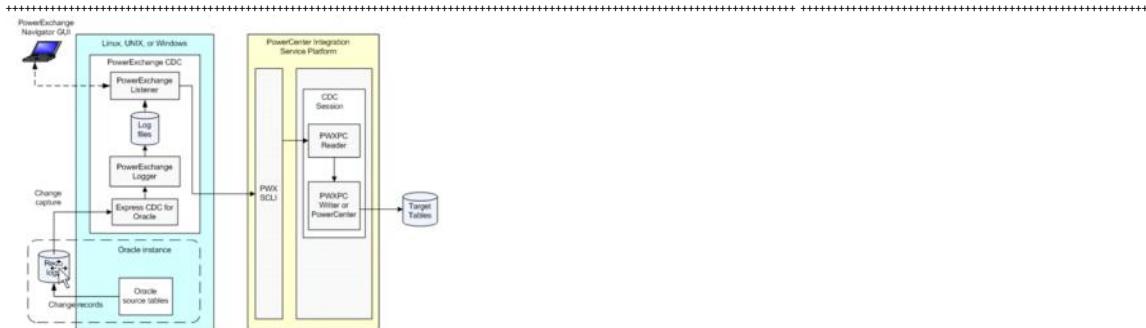
DTL\_CAPXTIMESTAMP  
DTL\_CAPACTION  
STG\_INS\_DT

**DTL\_CAPXTIMESTAMP** timestamp of when original trans happened in Source system

And this is the driving factor for CDC run

**DTL\_CAPACTION** is description of what was the action like I, U or D

**STG\_INS\_DT** is system generated date on when it is inserted to STG table



## 2. How to maximize performance of a single copy activity:

We recommend you to first maximize performance using a single copy activity.

- If the copy activity is being executed on an *Azure integration runtime*:

Start with default values for *Data Integration Units (DIU)* and *parallel copy* settings.

- If the copy activity is being executed on a *self-hosted integration runtime*:

We recommend that you use a dedicated machine to host IR. The machine should be separate from the server hosting the data store. Start with default values for *parallel copy* setting and using a single node for the self-hosted IR.

## Parallel copy

You can set the `parallelCopies` property to indicate the parallelism you want the copy activity to use. Think of this property as the maximum number of threads within the copy activity. The threads operate in parallel. The threads either read from your source, or write to your sink data stores. [Learn more.](#)

|                                                                               |
|-------------------------------------------------------------------------------|
| 1 Historical data Copy(Golden Copy) of ISDW and DEEP data                     |
| 2 Handling of Historical data updates(Adhoc prod data updates)                |
| 3 During parallel testing - in case of any issues - we may need to bring data |

MRIS SMART & ISDW-ODS Data Replication

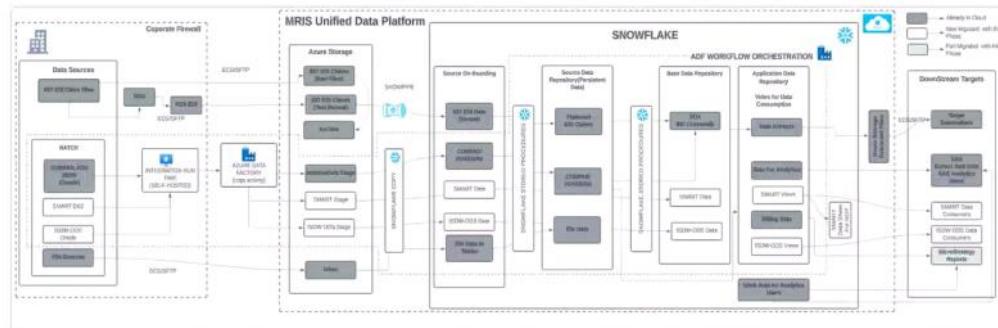
In this phase, SMART and ISDW-ODS data is replicated to Snowflake to prepare for DEEP migration to the cloud as well as SMART & ISDW-ODS ETL migrations to the cloud.

#### Key Features of Migration

- The SMART data will be replicated from current DB2 database to Snowflake using Azure Data Factory SHIR.
  - The ISDW-ODS data will be replicated from the current Exadata Database to Snowflake.
  - SMART DB2 on-prem will continue as usual without any changes

## Benefits & Business Value Add

- It will kick-off the SMART and ISDW-ODS journey onto cloud.
  - This approach will help to divide the effort into two phases and align closely with MDP for SMART.
  - Major workloads like DEEP when migrated to Snowflake will help drive user adoption.



SMART

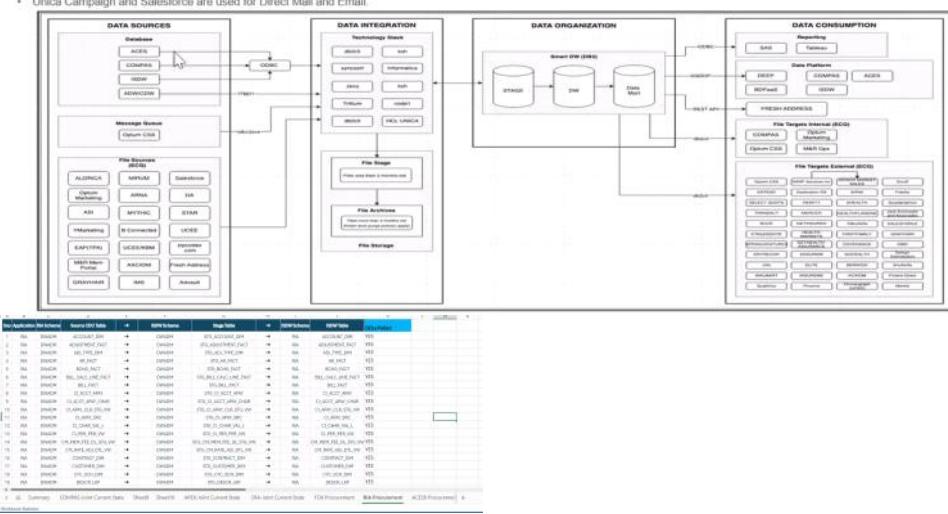
**SMART is the Marketing Data Warehouse of MRIS. It serves the marketing purposes like Campaigns and Rate Quotes etc.**

## Key Features of SMART

- SMART is the Marketing Data platform for the MRS. It has MDM capabilities for Data Quality and Corrections.
  - It sources data from
    - Files
    - Databases
    - IBM MQ
    - REST API Calls
  - Unica Campaign and Salesforce are used for Direct Mail and Email

#### Tech Stack:

- SMART Database : DB2
  - ETL : DMEExpress ( Precisely) and Informatica, Shell
  - Scheduling : TWS
  - Identity Management and Data Quality : Trillium and Code1.
  - Campaign Management : HCL Unica.



Hi all, please request below role for Informatica RWE role.

**MS Groups:**  
MPC\_ISW\_RWE

| Environment | Domain Name   | Gateway Host               | Gateway Port |
|-------------|---------------|----------------------------|--------------|
| Development | MPC_DOM_DEV06 | rn000095259<br>rn000095260 | 6005         |

Please request access to Rally by following the steps in the document in the link. If you already have an **ACTIVE** rally account, please ignore this by replying "Not Required" so that I can ask the MRIS PM to enable the workspace and project for your account. Thanks!

Raise Secure Access ([Please use this link to request a Rally account](#)). Raise for new user (non-Admin)

- **Workspace = Insurance Solutions**
  - **Project = MRIS 2024 Modernization**

Data Migration Framework:

## Data Migration Framework.



```

select * from 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_COMMON_BATCH_METADATA'
select * from 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_METADATA'
select * from 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_OBJECT_METADATA'

SELECT *
FROM 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_CONTROL'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_CONTROL_HISTORY'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_LOG'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_EXTRACT_PROCESS_DATES'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_PROCESS_DATES'

select * from 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_OBJECT_CONTROL'
select * from 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_OBJECT_CONTROL_HISTORY'
select * from 'ISOC_DEV_DM_DB'.'UTIL'.'ETL_BATCH_OBJECT_CONTROL_LOG'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'LZ_FOX'.'OMP_CLM_SFMT'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'SRC_FOX'.'ABT_CLM_SFMT'
SELECT *
FROM 'ISOC_DEV_DM_DB'.'SRC_FOX'.'CLM_SFMT'

SELECT *
FROM 'ISOC_DEV_DM_DB'.'LZ_FOX'.'STG_LCL_PRG_PROC_SFMT'

Results Data Preview

```

| FILE_FORMAT | STAGE         | CREATE_DATE  | CREATED_BY    | UPDATE_DATE | UPDATED_BY    | APP_SCHEMA | SOURCE_TYPE | HOST   | PORT        | SERVICE_NAME | SECRET_NAME   | USER_NAME      | STG_COLUMN_ID |
|-------------|---------------|--------------|---------------|-------------|---------------|------------|-------------|--------|-------------|--------------|---------------|----------------|---------------|
| LX5_WH      | NULL          | NULL         | 2024-02-29... | SANDEEP...  | 2024-02-29... | SANDEEP... | NULL        | NULL   | NULL        | NULL         | NULL          | NULL           | NULL          |
| LX5_WH      | UTILFF_DAT... | @UTILSTAG... | 2024-02-29... | SANDEEP...  | 2024-02-29... | SANDEEP... | FOX_APP     | ORACLE | ed2fd02-vip | 1521         | foxdb01svr... | secret-ira-fox | SVC_ACT_E...  |
| LX5_WH      | NULL          | NULL         | 2024-02-29... | SANDEEP...  | 2024-02-29... | SANDEEP... | NULL        | NULL   | NULL        | NULL         | NULL          | NULL           | NULL          |

The screenshot shows the Microsoft Azure Data Factory pipeline editor. A pipeline named "vmt\_OperationalReporting\_v1" is selected. It contains three activities: "Batch\_PostProcess", "vmt\_OperationalReporting\_v1", and another "Batch\_PostProcess". The pipeline status is "Succeeded". Below the pipeline, a table shows the run history with three rows, each detailing a successful run.

| Pipeline run ID                   | Run start            | Duration | Integration runtime      | User properties | Activity run ID                   | Last modified        |
|-----------------------------------|----------------------|----------|--------------------------|-----------------|-----------------------------------|----------------------|
| 8d028d9-3555-4476-9969-7c5d4585dc | 3/5/2024 11:17:50 AM | 1m 1s    | vmt-adf-ls01 (East US 2) |                 | 671afac-ef7f-4fa-a15-741259726288 | 3/5/2024 11:17:50 AM |
| 10d49-034b-4077-8eab-53a04820a0   | 3/5/2024 11:19:57 AM | 3m 59s   |                          |                 | 10d49-034b-4077-8eab-53a04820a0   | 3/5/2024 11:19:57 AM |
| 028fb10-40a2-45d-9156-49117a50ff  | 3/5/2024 11:12:46 AM | 1m 10s   | vmt-adf-ls01 (East US 2) |                 | 028fb10-40a2-45d-9156-49117a50ff  | 3/5/2024 11:12:46 AM |

## ROW ACCESS POLICIES WALKTHROUGH

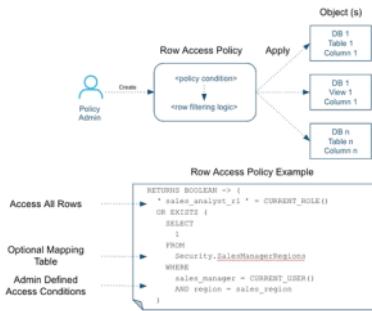
### Row Access Policy

- Policy is a schema level object
- Syntax consistent with Masking Policy
- Decoupled from data objects for manageability and flexibility
- Same policy can be applied to multiple objects
- Filter rows from read operations including rows selected by UPDATE, DELETE and MERGE
- Does not block incoming rows via INSERT | COPY | PIPE
- Can be added either when the object is created or after the object is created

### Supports

- Tables, Views, External Tables, Data Shares
- Compatible with Dynamic Data Masking policies on tables or views
- Context functions in policy body
- Clones carry over policies

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### Documentation

The screenshot shows the Snowflake Documentation page for Row Access Policies. It includes a navigation bar with links for Getting Started, Guides, Developer, Reference, Releases, Tutorials, and Status. The main content area shows examples of Row Access Policies, including a "Raw Access Policy Example" and a "Representative use case: Use a mapping table to filter the query result".

```

CREATE OR REPLACE ROW ACCESS POLICY r.ap_1
AS (emp_id varchar) RETURNS BOOLEAN
    "it_salesin = current_role"
;

This policy is the most concise version of a row access policy because there are no other conditions to evaluate, only the value of the CURRENT_ROLE.

If role hierarchy needs to be considered, this policy could similarly use IS_ROLE_IN_SESSION to be more inclusive of other roles to see the employee ID number in the query result.

Alternatively, to consider additional conditions, using the CASE function allows including WHEN/THEN/ELSE clauses to support more detailed conditional logic.

```

### Representative use case: Use a mapping table to filter the query result

A row access policy condition can reference a mapping table to filter the query result set, however using mapping tables may result in decreased performance compared to the more simple example.

For example, use a mapping table to determine the revenue values a sales manager can see in a specified sales region. The mapping table should specify the sales manager and the sales region (e.g. WW Worldwide, NA: North America, EU: European Union).

| Sales Manager | Region |
|---------------|--------|
| Alice         | WW     |
| Bob           | NA     |

### On this page

- What is Row-level Security?
- Use row access policies with Snowflake objects and features
- Manage row access policies
- Monitor row access policies with SQL
- Monitor row access policies with Snowlight
- Audit row access policies
- Troubleshoot row access policies

### Related content

- Process PII data using Snowflake RBAC, DAC, Row Access Policies, and Column Level Security (Snowflake Quickstart)

**Strategic Data Repository Platform (SDRP)**

Search

**Overview**

**Setup**

- Design
- Disaster Recovery
- V2 Tenant Overview
- V2 Tenant Configuration
- V2 Tenant Validation
- V2 Tenant Secure Roles
- V2 Tenant Deployment
- V2 Tenant Errors
- NIE Tenant
- Compute Tenant
- Storage Tenant**

**Role Flexibility:** Enables users to carry multiple functional roles, allowing them to choose their role based on their job requirements, enhancing role flexibility within an application.

**Data Duplication Mitigation:** Addresses pain points related to data duplication, long onboarding processes, and rigid access controls, reducing data duplicity and improving data efficiency.

The schema types are intended to clearly designate and contain data in various stages of lifecycle. Storage tenants are encouraged to design their data applications by considering how their data will be loaded, processed and prepared for consumption. Roughly speaking, these schemas may be thought of in the typical data mediation architecture as bronze (raw), silver (target) and gold (access) layers.

| Schema Type | Use Case                                                                        |
|-------------|---------------------------------------------------------------------------------|
| Raw         | Original data, unprocessed and usually loaded from a source system              |
| Target      | Refined datasets built from raw data; intermediate data used in later pipelines |
| Access      | Final (gold) datasets intended for consumer use                                 |

Access to schemas is governed by three persona roles: developer, support and analyst. These roles grant varying levels of access to each schema type. When building a storage tenant, it is critical to understand the roles these personas will play.

| Persona | Level of Access                   | Use Cases                       |
|---------|-----------------------------------|---------------------------------|
| Analyst | Read-only access to final schemas | Consumes the final data product |

**ON THIS PAGE**

- Storage Tenant Overview
- Getting Started
- Resource Groups
- Environments
- Snowflake Roles
- HCP Console
- Permissions
- Schemas
- Demo

**USEFUL LINKS**

- Office hours
- Product page (Console or otherwise)
- Strategic Data Repository Platform (SDRP) Hive Tag
- Teams channel
- Yammer community

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Search

**Overview**

**Setup**

- Design
- Disaster Recovery
- V2 Tenant Overview
- V2 Tenant Configuration
- V2 Tenant Validation
- V2 Tenant Secure Roles
- V2 Tenant Deployment
- V2 Tenant Errors
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Warehouses may also be provisioned to provide compute capacity, along with resource monitors to track and better manage credit usage in Snowflake.

**Getting Started**

To set up and populate a storage tenant with Snowflake objects, please follow the steps outlined below.

- An application owner ("owner") creates or determines an existing AIDE to use for their storage tenant
- Owner opens an Aha! intake request and provides details of their use case

| Role                                          | Description               | Access Level                               |
|-----------------------------------------------|---------------------------|--------------------------------------------|
| AZU_SDRP_{TENANT PREFIX}_{ENV}_ANALYST_ROLE   | Data analyst/scientist    | Provides read-only access to objects       |
| AZU_SDRP_{TENANT PREFIX}_{ENV}_DEVELOPER_ROLE | Software/systems engineer | Provides read/write access to most objects |
| AZU_SDRP_{TENANT PREFIX}_{ENV}_SUPPORT_ROLE   | Operations/devops support | Provides limited write to certain objects  |

Additionally, administrators may deploy **container roles**. A container role is a Snowflake role that does not come preconfigured with any particular permissions, and instead allows the tenant's users to define their scope and meaning. Container roles are created via HCP Console, and follow a similar naming convention:

- AZU\_SDRP\_{TENANT PREFIX}\_{ENV}\_{NAME}\_CN\_RL

Container roles are typically used as membership lists to check if a particular Snowflake user belongs to a role or not. These roles can then be used in row access policies and column masking policies to validate if data should be visible for a subset of users.

All of these roles are created in Secure, which allows tenants to control who can access and manage their Snowflake objects.

**ON THIS PAGE**

- Storage Tenant Overview
- Getting Started
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**Getting Started**

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Resource Groups

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HCP Console

Permissions

Schemas

Demo

**USEFUL LINKS**

Office hours

Product page (Console or otherwise)

Strategic Data Repository Platform (SDRP) Hive Tag

Teams channel

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**HCP Console**

Feedback Support

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Search

**Overview**

**Setup**

- Design
- Disaster Recovery
- V2 Tenant Overview
- V2 Tenant Configuration
- V2 Tenant Validation
- V2 Tenant Secure Roles
- V2 Tenant Deployment
- V2 Tenant Errors
- NIE Tenant
- Compute Tenant**
- Storage Tenant

**High Level Process Flow**

1. Data consumer requests the subscription for the required data products in HCP Data Catalog
2. Once the request is approved, HCP Data Catalog creates 3 resources
  - Identity Resource - Creates all the Snowflake objects along with Identity Access Role and Functional Role
  - Subscription Resource - Creates Access Role for Subscription
  - Identity User Resource - Grants Functional Role to the User
3. Then all the compute tenant resources are created in PRM and Snowflake and privileges to these resources are granted to Access Roles and then to Functional Role
4. If data consumer is already an existing snowflake user, then the Functional Role is granted to the user
5. If data consumer is not an existing snowflake user, then secure access request is created to grant a snowflake access to user
6. The secure access request needs approval and it might take 2 hours to create a new snowflake user and then the Functional Role is granted to newly created user
7. Data consumer should only use the Functional Role `RG_NAMESPACE_CMPT_ROLE` to perform actions on the data products.
8. The data consumer can be removed from the list of users in HCP Data Catalog, thus revoking all the privileges granted to data consumer on data product
9. Data consumer can also destroy all the resources by making a request to HCP Data Catalog, thus deleting all compute resources from PRM and Snowflake

**Resource Group**

- A Resource Group is a logical container to place all the related PRM resources. Resource Group creates PRM privileges to access and perform operations on the data objects that is requested by the data consumer

ON THIS PAGE

- Compute Tenant Overview
- High Level Process Flow
- Resource Group
- Role Hierarchy
- Modify Warehouse Using HCP Console
- Role Privileges
- Identity Access Role
- Subscription Access Role
- Monitor Usage
- Dos and Don'ts
- Dos
- Don'ts

USEFUL LINKS

- Office hours
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- Strategic Data Repository Platform (SDRP) Hive Tag

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Search

**Overview**

**Setup**

- Design
- Disaster Recovery
- V2 Tenant Overview
- V2 Tenant Configuration
- V2 Tenant Validation
- V2 Tenant Secure Roles
- V2 Tenant Deployment
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- Storage Tenant

**Modify Warehouse Using HCP Console**

**Subscription & Approval**

Registering a Data Product

Data Product Registration Questions

Product Registration Approval Process Workflow

**Subscription Approval Process Workflow**

Submitting a Data Product Subscription

Requesting an Extension on a Data Product Subscription

Data Discovery & Metadata Management

Bulk CSV Enrichments

Whitepapers

Release Notes

**Metadata Ingestion**

**MetaAI**

**Access Management & Provisioning**

**Support**

ON THIS PAGE

Product Subscription Approval Workflow Overview Workflow for Approvers Overview of Each Section Within Subscription Approval View of Subscription Approvals within HCP Data Catalog Subscriptions Approval Workflow for Data Admins Overview of Each Section within Approval

USEFUL LINKS

Data Platform Hive Tag Office hours Product marketing page Teams channel

Feedback

This tab details all the users in the Access Group that has submitted the subscription.

- Admin role: Access group admins are responsible for participating in the subscription approval workflow & managing users in the Access Group.
- Viewer role: If a subscription has been approved for use, viewers are the users that are accessing the data.

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**Data access**

Subscription Name: UHC Member Benefits Worthy 30

Resource group: hcp-dp-product-team

Data product: UHC Member Eligibility

**Platform instance general details**

This Subscription grants access to a Data Product hosted within the UHG DWaaS Snowflake Platform. To start using your Subscription:

- 1. Click the login link to navigate to the Snowflake UI in your browser.
- 2. Click the "Sign in using AzureAD" button if prompted. This will sign you in via Optum SSO. Do NOT log in with manual username/password.
- 3. In the top-right corner, click your name and select the Role named after your HCP Resource Group (see Credentials section below).
- 4. You are now able to start executing queries against any UHG DWaaS Snowflake products your HCP Resource Group is subscribed to!
- For full documentation and advanced connection options, please visit the [UHG DWaaS Product Site].

**Credentials**

bobbie-jean.nowak@optum.com  
HCP\_DP\_PRODUCT\_TEAM\_7097FB1\_CMTP\_ROLE

**Connection information**

- Account Identifier: uhg\_uhgdwaaS
- Browser Login: <https://uhg-uhgdwaaS.snowflakecomputing.com/console>
- Connector Path: uhg\_uhgdwaaS-east-us-2.azure

**ON THIS PAGE**

Product Subscription Approval Workflow  
Overview  
Workflow for Approvers  
Overview of Each Section Within Subscription Approval  
View of Subscription Approvals within HCP Data Catalog  
Subscriptions Approval Workflow for Data Admins  
Overview of Each Section within Approval

**USEFUL LINKS**

Data Platform Hive Tag  
Office hours  
Product marketing page  
Teams channel

data.hcp.uhg.com

Clinical Cloud Consumer Financial

| SUBPACKAGES                  | PRODUCTS | SUBPACKAGES       | PRODUCTS | SUBPACKAGES      | PRODUCTS | SUBPACKAGES      | PRODUCTS |
|------------------------------|----------|-------------------|----------|------------------|----------|------------------|----------|
| Allergy Intolerance          | (1)      | Access Management | (1)      | Communications   | (1)      | Accounts         |          |
| Appointment                  | (1)      | Accounts          | (1)      | Consumer Profile | (4)      | Banking          |          |
| Care Management              | (4)      | Costs             |          | Interactions     | (1)      | Billing-Payments |          |
| Care Plan                    |          | Governance        |          | Preferences      |          | Commerce         |          |
| Care Team                    |          | Infrastructure    |          | Recommendations  |          | Payments         |          |
| Clinical Master Data         |          | Insights          | (1)      | Signals          | (1)      |                  |          |
| Clinical Quality Results ... |          | Resources         | (2)      | Profile          |          |                  |          |
| Communication                |          |                   |          | Segmentation     |          |                  |          |
| Condition                    | (1)      |                   |          |                  |          |                  |          |
| Device                       |          |                   |          |                  |          |                  |          |
| Diagnostic Report            | (1)      |                   |          |                  |          |                  |          |
| Document Reference           |          |                   |          |                  |          |                  |          |
| Encounter                    | (2)      |                   |          |                  |          |                  |          |
| Family Member History        |          |                   |          |                  |          |                  |          |
| Goal                         | (1)      |                   |          |                  |          |                  |          |
| Health Service Case          | (1)      |                   |          |                  |          |                  |          |
| Health System Clinical Da... |          |                   |          |                  |          |                  |          |
| Immunization                 | (1)      |                   |          |                  |          |                  |          |
| Laboratory                   |          |                   |          |                  |          |                  |          |
| Medication Statement         | (1)      |                   |          |                  |          |                  |          |
| Observation                  | (1)      |                   |          |                  |          |                  |          |
| Plan Definition              |          |                   |          |                  |          |                  |          |
| Procedure                    | (1)      |                   |          |                  |          |                  |          |
| Provenance                   |          |                   |          |                  |          |                  |          |
| Questionnaire                |          |                   |          |                  |          |                  |          |
| Questionnaire Response       | (1)      |                   |          |                  |          |                  |          |
| Service Request              | (1)      |                   |          |                  |          |                  |          |
| Utilization Management Pr... |          |                   |          |                  |          |                  |          |

Explore Clinical > (18)      Explore Cloud > (4)      Explore Consumer > (7)      Explore Financial >

Healthcare Platform

Discover Products APIs & Data Community Learning

Docs Products Packages Engineering Best Practices HCP Guides

**Subscription & Approval**

Registering a Data Product  
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**Subscription Approval Process Workflow**  
Submitting a Data Product Subscription  
Requesting an Extension on a Data Product Subscription  
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Bulk CSV Enrichments  
Whitepapers  
Release Notes  
**Metadata Ingestion**  
MetaAI  
**Access Management & Provisioning**  
Support

The respective platform or site subscription, provisioned hyperlink will show the details necessary for the accessing the data. (See below)

- Information Requests:** If an outstanding information request requires a response from a Data Admin, it will be displayed here.
- Application ID:** Application ID associated with the Access Group that submitted subscription
- Resource Group:** Resource Group associated with the Access Group that submitted subscription
- Start Date:** Displays the subscription start date entered on the subscription form
- End Date:** Displays the subscription start date entered on the subscription form
- Action:** A vertical ellipsis will display only for Access Group admins to:
  - Edit Subscription:** Allows edits to the subscription form while status is pending
  - Cancel Subscription:** Allows cancellation of an active subscription & removing data access for all Access Group viewers. An email will be sent to all Access Group members when a subscription has been cancelled.

**Provided Data Access Details**

**Data access**

Subscription Name: UHC Member Benefits Worthy 30

Resource group: hcp-dp-product-team

Data product: UHC Member Eligibility

**Platform instance general details**

This Subscription grants access to a Data Product hosted within the UHG DWaaS Snowflake Platform. To start using your Subscription:

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**ON THIS PAGE**

Product Subscription Approval Workflow  
Overview  
Workflow for Approvers  
Overview of Each Section Within Subscription Approval  
View of Subscription Approvals within HCP Data Catalog  
Subscriptions Approval Workflow for Data Admins  
Overview of Each Section within Approval

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**Docs** **Products** **Packages** **Engineering Best Practices** **HCP Guides**

V2 Tenant Validation  
V2 Tenant Secure Roles  
V2 Tenant Deployment  
V2 Tenant Errors  
NIE Tenant  
Compute Tenant  
Storage Tenant  
Connecting  
3rd Party Tool Guides  
Usage  
Training  
Support  
Contact Us  
FAQ's & Customer Testimonials  
Release Notes

Storage tenants are provided with three distinct Snowflake roles per environment that grant varying permissions to different Snowflake objects. These roles are intended to be granted to **personas** depending on their job function and level of involvement in the ongoing operations of the tenant.

The roles follow a naming convention which includes the name of the storage tenant and a three-letter acronym for the environment.

| Role                                          | Persona                   | Description                                |
|-----------------------------------------------|---------------------------|--------------------------------------------|
| AZU_SDRP_{TENANT PREFIX}_{ENV}_ANALYST_ROLE   | Data analyst/scientist    | Provides read-only access to objects       |
| AZU_SDRP_{TENANT PREFIX}_{ENV}_DEVELOPER_ROLE | Software/systems engineer | Provides read/write access to most objects |
| AZU_SDRP_{TENANT PREFIX}_{ENV}_SUPPORT_ROLE   | Operations/devops support | Provides limited write to certain objects  |

Additionally, administrators may deploy **container roles**. A container role is a Snowflake role that does not come preconfigured with any particular permissions, and instead allows the tenant's users to define their scope and meaning. Container roles are created via HCP Console, and follow a similar naming convention:

- AZU\_SDRP\_{TENANT PREFIX}\_{ENV}\_{NAME}\_ON\_ROLE

Container roles are typically used as membership lists to check if a particular Snowflake user belongs to a role or not. These rules can then be used in row access policies and column masking policies to validate if data should be

**To search your own products**

https://data.hcp.uhg.com/data-forge/datasets

MSN Google News CNN ESPN HuffPost YouTube Bank of America LunaPic Free Online Color Picker online Immerse - Home Service Catalog - IT CareData Platform - Other favo

Healthcare Platform Discover Products APIs & Data Community Learning Console CD

Data Catalog Search Datasets, Data Products, and more

Browse Data Assets Actions My Data Analytics My Views

rg-isdc-dev-47d2500 Cancel Submit Changes

1. Search user

2. Select role

Viewer  Admin

3. Add role to access group

Add Role

Admin Role:  
Can view & manage subscriptions & Access Group users. This role does not grant data access

Viewer Role:  
Can view subscriptions & Access Group users. This role grants data access.

Filter by keyword

| User Name         | MS ID    | Access group status | Status date | Country | Department                   | Role   | Action |
|-------------------|----------|---------------------|-------------|---------|------------------------------|--------|--------|
| Thokala, Santhosh | snaldu20 | Approved            | 04/22/2024  | USA     | OI Advisory and Implement... | Viewer |        |
| Cheema, Dave      | dcheema  | Approved            | 04/22/2024  | USA     | OI Advisory and Implement... | Admin  |        |
| Cheema, Dave      | dcheema  | Pending Removal     | 04/22/2024  | USA     | OI Advisory and Implement... | Viewer |        |
| Palla, Sandeep    | spalla2  | Approved            | 04/22/2024  | USA     | OI Advisory and Implement... | Admin  |        |
| Shin, John S      | jshin    | Approved            | 04/26/2024  | USA     | OI Advisory and Implement... | Viewer |        |
| Shin, John S      | jshin    | Approved            | 04/22/2024  | USA     | OI Advisory and Implement... | Admin  |        |

Discrepancies between dashboards and the bill we receive from HCC  
ODI (RAM + CPU), Public cloud (Azure), on-premises VMs hosting SHIR component of Azure Data Factory (ADF), Storage, SDRP(Snowflake) and HCC

Discrepancies between dashboards and the bill we receive from HCC

HCC team: chad.brovold@optum.com

Azure Subscription Setup Level Set

Title:   
 Thokala, Santhosh  Palla, Sandeep  Makenna, Gopikrishna  Sundaram, Anitha  Saggam, Rahul  
 Shin, John S  Engel, Christian S  Cheema, Dave

Required:

Optional:

Start time: Mon 3/11/2024 11:30 AM Eastern Time (US & Canada)  All day  Time zones

End time: Mon 3/11/2024 12:00 PM Eastern Time (US & Canada)  Make Recurring

Location: Microsoft Teams Meeting

Hello, Team.

John and I briefly chatted and I learned that Sandeep has the experience of setting up a new subscription from the ground up and keep it running smoothly.

HCE team needs to set up a new subscription as well and below is our listed acceptance criteria. We appreciate if you could give us some guidance.

1. The new subscription(s) builds under the Optum Architecture, Security and Data Governance Compliance guideline.
2. The new subscription(s) models after the existing OCDP subscription HCE team is under but also evaluates the pain points the team experiences currently and will improvise to minimize them in the future.
3. The new subscription(s) POC will take into consideration the organization's future usage reporting needs, e.g. cost per each resource (Lab, OCDPM etc) drilling down to Databricks, ADF, Airflow and so on.
4. The new subscription(s) POC will cover all the tools, including but not limited to ADF, Databricks and Airflows, with a complete list of inventory and tested steps for future migration.
5. The new subscription(s) POC will cover all configurations, including but not limited to deployment, connections to Snowflake and other sources and targets.
6. The new subscription(s) POC discovers the roles and responsibilities of HCE team in the future and reaches SLA agreements with other supporting teams.

SMART-DW gcp-kafka-prod/str... BladefBridge Comm... Dynamic Tables Del... Azure Data Factory... New tab Azure Data Factory... Data Engineering PL... ADF Naming Conv... https://uhgdatabase... How Do I View Priv... > Other

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## Non-Production Account Request

User

Fill Out → Step 1: Create Resource Group

Submit → Step 2: HCP PCAM Request

Build & Deploy → Step 3: NonProd Created, Secure Requests

Repository, Infrastructure as Code, CI/CD

ON THIS PAGE

- Intake Overview
- Critical Information
- Network Perimeter
- Intake Process
- Non-Production Account Request
- Preparing for Production
- Security Cloud Endorsement
- Security Cloud Endorsement will include a review of:
- Example documentation can be found here:
- HITRUST certified services and modules:
- Production Go Live
- Intake Purpose

Feedback Support

rg-idev

Learning Community

## Public Cloud Account Management

Create Public Cloud Account

Overview

Create a new public cloud account.

For guidance on choosing a provider, see [Choosing a provider](#).

Terms and Conditions

- LoB CoE approval must be obtained.

- The AIDE / ASKID association must be established.

- All users of Public Cloud must be assigned to the ASKID.

- Production account requests must be approved by the LoB CoE.

Environment Type: Select...

Cloud Service Provider: Select...

Account Type: Select...

I attest that I have read and accept the [Terms and Conditions](#) of provisioning a public cloud account.

Close Continue

SMART-DW gcp-kafka-prod/str... BladefBridge Comm... Dynamic Tables Del... Azure Data Factory... New tab Azure Data Factory... Data Engineering PL... ADF Naming Conv... https://uhgdatabase... How Do I View Priv... > Other

Announcement Posted to UHD on Mar 6, 2024 Accelerate development with GitHub Copilot!

Files

ts main + Q Go to file

azur... github Terraform environments main modules azur... azure\_data\_factory main.tf outputs.tf variables.tf

azur... azure\_data\_factory\_1st

azur... azure\_data\_factory\_wrk

azur... azure\_keyvault

azur... azure\_network\_security\_group

azur... azure\_resource\_group

azur... azure\_storage\_account

azur... azure\_subnet

azur... azure\_virtual\_network

READMEmd vitals.yaml

tsd-platform / Terraform / modules / azure\_data\_factory /

spalla2\_uhg remove shir .int.mpp

Add file ...

b4b30ea · 3 months ago History

| Name         | Last commit message  | Last commit date |
|--------------|----------------------|------------------|
| main.tf      | remove shir .int.mpp | 3 months ago     |
| outputs.tf   | remove shir .int.mpp | 3 months ago     |
| variables.tf | Create variables.tf  | 4 months ago     |

https://github.com/optum-eeps/hcc-intake/blob/ISDC/ISDC/intake.md

SMART-DW gpz-kafka-prod/str... BladeBridge Comm... Dynamic Tables Del... Azure Data Factory... New tab Azure Data Factory... Data Engineering Pl... ADF Naming Conv... https://hpdisease... How Do I View Privil...

**Files**

ISOC

Q Go to file

\_github AWS-omni-eeca\_0079250-nonprod... AZU GHEC Subscription Ambient NonProd AuthExt-nonprod Fristline\_Benefits\_DataMart\_Non... HCC\_Azure\_Goldenimages\_POC HCP Console Nonprod ISDC intake.md NonProd\_AAPP\_Sales\_2023 OMNI\_PLATFORM\_AWS\_NONPR... ORx Pharmacy Care Tech Nonprod TQD Non-Prod ZF-GPA-Cloud-NP adp-dev broaden\_health\_nonprod ce-apid ce-obapi-apid chathcp-nonprod claims360-payer-package colonial\_np cpap-ce-stg doa-automation

hcc-intake / ISDC / intake.md

Preview Code Blame 391 lines (256 loc) - 18.4 KB

• NOTE: verify that the members of the MS/hcc\_intake SECURE group have access to see the results

My team will be using [TOOL] for our CI/CD process

[To request Production accounts , use this space to provide direct links to describe your CI/CD build pipelines.]

**Section 4: Architecture Summary**

A note about Approved Cloud Components and Tech Landscape / PADU

Please note that you will need to validate that all components that you choose to implement are in Optum's Tech Landscape (PADU) with the following Ratings:

- To request Production accounts. Must be rated as Preferred (P) or Acceptable (A)
- Using Discouraged or Unacceptable components may result in having to re-submit your request, and will delay your Intake review.

**Architecture Overview**

Guidance: This section must contain logical architecture diagram(s) of your solution that can be reviewed by others. The diagram should list all components in your account, should be clear which resources are in your account, in another account, or On Prem, and should indicate the type of cloud resource used to deploy each component.

- Provide the actual diagram or diagrams in png or jpg format - not PDF files, please.
- This should not be links to separate documents, nor documentation with embedded diagrams.
- Strongly recommend referencing this link for Section 4 Architecture Summary diagram information and specifics.
- Populate the table below (add rows as needed) to identify the cloud components and their purpose/usage. Please add as much detail as possible to help the reviewers get a complete picture of your logical architecture.



### PCMonitor: Files in user homes (rn000095259)

ess\_dis\_admins <msnpcadm@rn000095259.uhc.com>  
To ess\_dis\_admins; Cheema, Dave  
Retention Policy UHGLinbox (90 days)

Expires 6/17/2024

The following files were found in your home directory on "rn000095259" and should be removed. Please be advised that data files must be saved in the appropriate folders in the project area and not in user homes. When the /home filesystem fills-up, all other users on the server will be impacted.

jave.cheema@optum.com

```
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_1.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_7.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_5.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_10.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_6.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_8.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_9.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_3.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_4.csv
4707310 /home/dcheema/historical_data_migration_oracle/output/staging/DCHEEMA_batch_2.csv
```

https://github.com/optum-eeps/sdrp-tenants/tree/master/ISDC

Personal Mail - Banglae Gau... https://github.com... Architecture Patterns Dataricks vs Snow... Story Points Revisited SDRP Decks GitHub Enterprise

optum-eeps / sdrp-tenants

Code Issues Pull requests Actions Projects Security Insights

Files

sdrp-tenants / ISDC /

sdrp-ghec-ops\_uhg [skip ci] adding tenant summary

| Name                      | Last comment message            |
|---------------------------|---------------------------------|
| ...                       | [skip ci] add files by SDRP     |
| SDRP                      | [skip ci] add files by SDRP     |
| assets                    | [skip ci] adding tenant summary |
| Configurations_Summary.md | [skip ci] adding tenant summary |

PUT file://<path\_to\_file>/<filename> @internalStage

```
[ PARALLEL=<integer> ]
[AUTO_COMPRESS = TRUE | FALSE]
[ SOURCE_COMPRESSION = AUTO_DETECT | GZIP | BZ2 | BROTLI | ZSTD | DEFLATE | RAW_DEFLATE | NONE ]
[ OVERWRITE = TRUE | FALSE ]
```

sqlfile\_utility - ERROR - 002003 (02000): 01b3204f-0b05-d5f6-00ec-8d182cc0bd57: SQL compilation error:  
Stage 'ISDC\_DEV\_DW\_DB\_SRC\_ISDW.ISDW\_DEV\_STAGE' does not exist or not authorized.

SHOW STAGES IN

```
{
    ACCOUNT DATABASE 'ISDC_DEV_DW_DB' SCHEMA 'SRC_ISDW'
```

```
COPY INTO ISDC_DEV_DW_DB_SRC_ISDW.APPLICATION_QUESTION_HISTORY from @isdw_dev_stage PATTERN='.*APPLICATION_QUESTION.*.[].csv [.]gz' FILE_FORMAT=(TYPE='CSV'
field Optionally_enclosed_by='"' null_if='()') ON_ERROR='CONTINUE' purge=TRUE;
```

**Situation:**

Historical data migration solution works fine for the workloads up 10M rows. However, for the larger workloads, the process gets after ~15 minutes with no explanation.

**Discovery:**

We found out that the **problem is not with the Oracle database or the Snowflake**; it is with the server where this process runs. Ranjith and myself spent quite a bit time to diagnose the issue. We ran the job using **nohup** command and the process was still getting killed. This process is **using up all the memory and not releasing it** after using it. We were able to see that it would **consume all the memory** and the process would come to a standstill and we could see that there was no memory left. After a little you get one -word response: **Killed**

**Options:**

- Continue to work on this solution
- Use AZCopy with one table at a time
- Azure Data Factory (ADF) with SHIR

```
+++++global batchProcessStatus
batchProcessStatus=True
snowflake_utility
appMain
app_process --> process_no_split_table --> export_csv(rows, filePrefix)
```

```
source_table_name
+++++source_config_file=("./configurations/source_config/Source_config.yaml"
with open(source_config_file, 'r') as stream:
    source_configs = yaml.load(stream, Loader=yaml.FullLoader)
```

```
source_table_name=source_configs['source'][source_table_name']
snowflakeTable=source_configs['destination'][snowflakeTable]
```

```
export_csv
process_no_split_table --> export_csv
process --> export_csv
```

```
publish_snowflake --> put_file_to_stage
```

```
+++++Meeting 03/21/2024 with Vaibhav and John S.
Subject: Code conversion using CodeXchange
Work with Verma and Ranjith to get the code
Work with Vaibhav at CodeXchange to see what can be done
Get stored procedures and DDLs from SMART and ISDW
Test out POC on DB2 stored procs
Shell scripts how they can be supported
```

```
+++++./configurations/source_config/source_config_APPLICATION_QUESTION.yaml
./configurations/source_config/source_config_APPLICATION_QUESTION.yaml
```

```
SQLPlus
```

```
Snowflake Data Share
Container roles
```

```
Started at 1:30 PM
```

```
+++++APPLICATION_AGENT - APPLICATION_AGENT_ID - 44,726 completed in 3 seconds
APPLICATION_QUESTION - APPLICATION_QUESTION_ID - 1,503,378 completed in 20 seconds
ACCOUNT_RECEIVABLE - ACCOUNT_RECEIVABLE_ID - 8,937,639 completed in :-0:01:52.201949
All three tables took: 03:13 minutes
INSURED_PLAN_PROFILE - INSURED_PLAN_PROFILE_ID - 33,452,814 - took ~25 minutes to read and post CSV file to Snowflake internal stage
```

```
+++++1. Currently only migrates one table at a time
2. Reached out to MRIS Oracle about the job timeout.
He suggested an approach to run the job in the background using nohup command. However, there is a problem with this approach, the job does not end even when you kill the session. It will require a server reboot. Not the best approach.
3. Asked Bob if he is aware of any other approach and he said he is not.
```

```
appMain - source_config
file_utility
oracle_utility - need to be read
```

```
order: 10938456-98-8374
```

```
+++++Meeting 3/28/2024 with Doug Ubele
CDC to be re-evaluated
Debezium, Click CDC
Click only support
Debezium --> Kafka infrastructure
```

```
Read app_config
if create_source_config == 'Y'
    create source_config_files - very small
```

```
Loop thru all source_config files
read source_config file
If load_table = 'Y'
    Get start_range, end_range, and # of rows
    if # of workload chunks > 1
        Create a collection of parameters (batches) of range index, current
  start and current end
```

```
Get split_query template
Call batch_process with batches, filePrefix, and splitQuery
move files from staging to failed staging files
using threading model, call process to process in parallel
In process function:
    prepare sql query and call it
    Get all rows
    and export data to a CSV file
    Publish CSV file to Snowflake stage
    Move staging files to archive folder
    Archive source_config_file
otherwise
    Call batch_process with no work load chunk splits
    Archive source_config file
```

```
*****
Oracle Query:
SELECT OWNER, TABLE_NAME, NUM_ROWSFROMall_tables
WHEREOWNERIN('COMPAS', 'APEX', 'SRA', 'FOX', 'RIA', 'ACESX', 'GENESYS', 'OCSS', 'EDI') ANDNUM_ROWS> 1000000;
Results:
OWNER | TABLE NAME | ROW COUNT
-----+-----+-----
COMPAS | INSURED_PLAN_BKP10062017 | 19548054
COMPAS | INSURED_PLAN | 19556030
COMPAS | INSURED_PLAN_PROFILE | 33452814
SRA | TEST_VW_DART_SMRTSALES_SOT | 13785838
*****
```

```
*****  
SELECT /*+ PARALLEL(4) */ COUNT(*) FROM FOX_APP_ISDW.CLM_HIST;
```

\*\*\*\*\*

\*\*\*\*\*

```
maxThreadCnt=20
currThreadCnt=threading.active_count()
while currThreadCnt>maxThreadCnt:
    time.sleep(2)
    currThreadCnt=threading.active_count()
logger.info(batch)
*****
```

```
2024-04-04 12:42:00,170 - app_process - ERROR - [Errno 21] Is a directory: './output/staging/'
```

#### 1. Install the required libraries:

```
pip install pyhive[hive]
```

#### 2. Import the necessary modules:

```
from pyhive import hive
import pandas as pd
```

#### 3. Create a connection to the Hive server:

```
conn = hive.Connection(host='localhost', port=10000, auth='NOSASL', database='your_database')
```

Make sure to replace 'localhost' with the hostname or IP address of your Hive server, and 'your\_database' with the name of the database where your table resides. Adjust the port number and authentication method ('NOSASL' is used for a non-secured Hive server) as per your setup.

#### 4. Execute a query to retrieve data from the table:

```
query = 'SELECT * FROM your_table'
df = pd.read_sql(query, conn)
```

Replace 'your\_table' with the name of the table you want to read. The `pd.read_sql()` function from the pandas library is used to execute the query and store the results in a pandas DataFrame.

#### 5. Close the connection:

```
conn.close()
```

#### 1. Using PyHive (Thrift API):

```
From pyhive import hive
```

```
# Replace with your Hive server connection details
host = "localhost"
port = 10000
username = "hive"
password = "your_password"
```

```

conn = hive.Connection(host=host, port=port, username=username, password=password)
cursor = conn.cursor()

# Write your HiveQL statement here
hql = "SELECT * FROM my_database.my_table LIMIT 10"
cursor.execute(hql)

# Fetch results (can be transformed further)
results = cursor.fetchall()

# Close the connection
conn.close()

# Process the results (list of tuples)
For row in results:
    print(row)

```

## 2. Using PySpark (Spark SQL):

```

From pyspark.sql import SparkSession

# Create a SparkSession with Hive support
spark = SparkSession.builder.appName("ReadHiveTable").enableHiveSupport().getOrCreate()

# Read the Hive table into a DataFrame
df = spark.sql("SELECT * FROM my_database.my_table")

# Print schema (optional)
df.printSchema()

# Show the first few rows
df.show(5)

# Further analysis or manipulation with PySpark functions on the DataFrame

```

### Choosing the Right Method:

- PyHive: Simpler for basic interactions, but less scalable for complex data processing.
  - PySpark: More versatile for large datasets and complex transformations, requires setting up a Spark environment.
- Additional Considerations:**
- Remember to replace connection details with your actual Hive server configuration.
  - You can modify the HiveQL statement (e.g., `SELECT specific_columns FROM...`) to retrieve specific data.
  - Explore PySpark documentation for advanced DataFrame manipulation techniques <https://spark.apache.org/docs/latest/>.

```
*****+-----+
|SELECT /*+ PARALLEL(4) */ c.* FROM FOX_APP_ISOW.CLM_HIST_1 --10202220551
DROP TABLE FOX_APP_ISOW.CLM_HIST_1;
CREATE TABLE FOX_APP_ISOW.CLM_HIST_1 AS SELECT /*+ PARALLEL(4) */ *
FROM FOX_APP_ISOW.CLM_HIST;
alter session enable parallel胆;
```

**Column-Level Security Implementation**

**Setup Policies and Assign to Columns**

*Column-level policies are simple functions to determine whether a user has access to a particular type of data. These policies are then assigned to columns and are automatically executed when a user accesses a column.*

| Role                                                                                                                                                                    | Column          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| create or replace masking policy pi_mask_name as (val string) returns string > case when current_available_role like '%cls_pi_name%' then val; else NULL end;           | mobile          |
| create or replace masking policy pi_mask_id as (val string) returns string > case when current_available_role like '%cls_pi_id%' then val; else NULL end;               | phone           |
| create or replace masking policy pi_mask_geography as (val string) returns string > case when current_available_role like '%cls_pi_geography%' then val; else NULL end; | mask_contact    |
|                                                                                                                                                                         | photo           |
|                                                                                                                                                                         | mask_photograph |
|                                                                                                                                                                         | dob             |

```

import os
import shutil
from os import path
from zipfile import ZipFile
from os import path
from shutil import make_archive

```

Import os  
Import shutil

From import path

From zipfile import ZipFile

From shutil import make\_archive

shutil.make\_archive(output\_filename, 'zip', dir\_name)

\*\*\*\*\*+-----+

import zipfile

```

def zip_file(file_path, zip_path):
    with zipfile.ZipFile(zip_path, 'w', compression=zipfile.ZIP_DEFLATED) as zipf:
        zipf.write(file_path, arcname=file_path.split('/')[-1])

```

```

# Usage
file_path = 'path/to/large_file.txt'
zip_path = 'path/to/output.zip'
zip_large_file(file_path, zip_path)
=====
• Asked Sree to create service request ticket to install DB2 and Hive packages on the UNIX server to run DB2 and Hive jobs
• He has created the ticket, now waiting for the admin to complete the packages installation
• Historical data migration process is almost done with the final touches
• Still waiting for the DEEP access control from Aditi and ODS access control from Ranjith
• Ranjith provided ISDW access control and we have analyzed it - the system's access permission are at the entity level
• We are going to meet with the Data Catalog team for their guidance on the implementation
• Need to send emails to Sree and Aditi and ask for the ETA to provide responses

```

No more candidates for the Azure/Snowflake admin from the offshore. Need to send a reminder to Vipin.

Questions:

- What is Liv's core concern from your vantage point?
- What is the timeline to create a formal response for his ask?

From <<https://docs.hcp.uhc.com/public-cloud/product-overview-launchpad>>

```

1 select * from F64350BP_L_CNSK_SRCH;
2
3 select dpaaa_name(FST_NM), * from F64350BP_L_CNSK_SRCH;
4
5 select dpaaa_name(LST_NM), * from F64350BP_L_CNSK_SRCH;
6
7 select dpaaa_name(SOC_SEC_NBR), dpaaa_name(FST_NM), dpaaa_name(LST_NM), dpaaa_multi_attr(LOCY_SRC_ID), * from F64350BP_L_CNSK_SRCH;
8
9 select FST_NM from F64350BP_L_CNSK_SRCH_10;
10
11 select dpaaa_name(FST_NM) from F64350BP_L_CNSK_SRCH_10;
12
13 select dpaaa_name(LST_NM) from F64350BP_L_CNSK_SRCH_10;
14
15 select dpaaa_name(SOC_SEC_NBR) from F64350BP_L_CNSK_SRCH_10;
16
17 select dpaaa_name(FST_NM), dpaaa_name(LST_NM), dpaaa_name(SOC_SEC_NBR), * from F64350BP_L_CNSK_SRCH_10;
18

```

```

POST /api/analytics/v1/unprotect HTTP/1.2
Authorization: Bearer eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI9
sf-custom-dpaas-data-element:"des_Name"
sf-context-current-account:"OPTUM_POC",
sf-external-function-current-query-id:"019ak20d-0b74-11
sf-context-current-user:"XIAOFEIJIANG@OPTUM.COM",
Content-Type:"application/json",
{
  "data": [
    ["0", "wYWi Hejwm"]
  ]
}

```

<https://optumvideo.uhc.com/channel/Healthcare%20Data%20Platform/300154822>

Karen Personal Tools DEV - Data Refresh Stage - Data Platform HCP Data Catalog Rally General UHC Links BLP Manager Catalog Demo Env. Home | Logout

The screenshot shows a video player interface. At the top, there is a navigation bar with links like 'Karen Personal Tools', 'DEV - Data Refresh', 'Stage - Data Platform', 'HCP Data Catalog', 'Rally', 'General UHC Links', 'BLP', 'Manager', 'Catalog Demo Env.', 'Home | Logout'. Below the navigation bar, the video player displays a thumbnail for a video titled 'vStreams Testimonial - Medicare Advantage' by 'Karen Personal Tools'. The video duration is listed as 03:42. The video player has a play button and other standard controls.

#### PRODUCT FEATURE OVERVIEWS



#### PROMOTIONAL VIDEOS





The screenshot shows the Azure portal interface with the 'Console' blade open. The account 'azu-isdc' is active. Key details include:

- Name:** azu-isdc
- Status:** Active - Check your email for login instructions
- Account ID:** d55fb61-ac66-4549-a170-1a3bbb27ab6f
- CSR:** AZU
- Account Name:** ISDC
- Account Type:** STANDARD
- Environment:** NonProd
- Compliance Environment:** COMMERCIAL
- Org:** UHG
- ASK ID:** UHGWM110-017761
- Owner/MSID:** emarjors
- RTM Number:** RTTM4152126

Requested Date: Oct 24, 2023 @ 10:29 am America/Chicago (UTC -05)  
Requested by: tkumar13

Note: The time taken to create a prod account from a non-production account can take between a couple of days to a few weeks. You can speed up the process by quickly and accurately filling out the intake markdown.

Intake Approval - Intake markdown approved  
Note: View and dismiss the intake markdown.

Feedback Support

Creating an application ID and AIDE application where the GL is attached to that application  
User group comes in here and says OK, our subscription is called Finance, MRIS Finance.  
We have an application called ISDC finance analysis and we have a resource group under their called ISDC Finance.  
You know XYZ and we want to subscribe to this product we just clicked on to get here.  
And then one access group for finance and one access group for marketing, right?  
start you know one we need to do on the one side we need to define those data products.  
And then the other side, we need to start thinking about who are these end user groups?  
Who are these existing roles and how they break up the roles being those actuarial, actuarial A/C, E actuarial, common intelligence or something?  
Remember those roles that we were looking at in the spreadsheet right now that those roles may be grouped into one or more applications?  
each role may be an application or three roles may be an application like the actuarial roles.  
Maybe one application with three different access groups, one for actuarial base, one for actuarial ACE, and then one for actual real common intelligence. OK.  
one side, we're doing the data product definition by domain.  
The other side we're trying to figure out who are the end user groups and how they should be organized into applications and access groups.  
snowflake sitting --> data catalog contains data products (schemas, tables grouped together) --> Users and user groups (subscribe data products) -->  
Application  
User groups can be part of an application

Snowflake --> schemas, tables data in Data Catalog --> in the middle with data products --> end users on top and between end users and data products you have applications and access roles

Create an AIDE (application)  
Define data products based on domains  
Who are users and the roles  
Multiple roles can be defined within an application  
Organize users into roles and roles into applications  
Users can subscribe to Data products  
snowflake --> data catalog (data products)--> applications & resource groups --> and access roles --> end user  
on right a set of comments, e.g., AIDE, put other comments how's resource access groups come into play. Explain the diagram.  
Showcase the architecture diagram tomorrow  
Data products, end consumption  
Put a picture together

Q. Row access policy - Where it should be placed?  
The Catalog provisions as coarse grained access, so the catalog would provision table level access for any of those in the data access group that are listed as viewers.  
If you have row and column level policies, those get stood up as container roles in snowflake and then those have to be.  
There's separately, you know, provisioned through secure.  
So if I'm a user and I subscribe to one of your data products that there's fine grained controls on.  
I go through the data catalog, I get my subscription and my intended use approved.  
I get my compute tenant stood up and I get my table level.  
The power my table level access provisioned, but I wouldn't see anything then until I take that secondary step to go to secure and request the specific FGA roles.  
And container roles.  
You're saying FGA? - Yeah. Yep.  
So you wanna detail that in your data product?  
You'd wanna write like in the access details section.  
You know your table level access and your tenant gets spun up through this process upon an approved subscription, but if you need for these this data product, you need to take an extra step and you need to go to a secure request these roles.

So at least it's obvious to the subscribers what they need to do.

++++++  
**Data Product**

A **Data Product** is an intersection of business domains, organizations, and the data needed to support them. As a result, products contain significantly more technical and business metadata. Products contain references to one or more datasets that have been ingested in the metadata catalog and are typically created in the HCP Data Platform UI. Products provide a streamlined governance experience, native auditability and adhere to the standard HCP package taxonomy, and can contain multiple modalities.

Read more on how Data Producer are making sense of the vast quantity of operational and analytical data at UHG through [HCP Analytical Data Products](#).

The following table provides an overview of the data elements which are required to register a new data product on the HCP Data Platform. To register a product you need to be authorized to do so by either an HCP package owner or the HCP platform customer support team. Once you are authorized you begin the product registration process on the [HCP Data Platform](#).

++++++

Application: ISDC finance Analysis

Resource Group: ISDC Finance

Users want to subscribe a product

One access group for Finance, another access group for Marketing

Figure out end user groups and how they should be organized into applications and access groups

One side - Define Data Products

Other Side - Who are the end user groups

Existing roles may be grouped into one or more applications

Each role may be an application with three access groups or three roles may be an application, e.g., actuarial roles

Maybe one application with three different access groups

Account Manager (AIDE)

Application ID (Business Owner, Technical Owner, Service Level Owner)

HCP Console

Resource Group (Admin, Contributor, Viewer) - Must be one of the three owners of the application and the AIDE/ASK ID must be backed by a proper GL string for Billing(e.g., must be funded)

HCP Data Catalog

Data Access Group (Admin, Viewer) - Must be a Resource Group Admin or Contributor to appoint Data Access Group Admins and create/submit subscriptions. Data Access Admins are assigned as secure group approvers.

Secure

Data Access Group (Admin, Viewer) - Viewer additions; required Approvals: Data Access Admin, Manager

Snowflake

DWaaS Compute Tenant (Viewer 1...n) has SF Role using which they subscribe Data Products (1...n) - Must be a Data Viewer to use the Compute Tenant and assume the corresponding SF Role.

++++++

Account Management (AIDE) --> attached to a GL

| Resource Group | Access Group                                |
|----------------|---------------------------------------------|
| Data Products  | Users, Users can subscribe to data products |

Database, schema, tables

++++++

Create a pristine list of data tables to be migrated

Clearly mark what needs to be migrated for Historical data migration

Identify any additional workloads to be migrated using Data Migration Python utility

Identify/Create target schemas and tables and who is going to be creating what?

++++++

Prod settings:

| /eimdata/isdc/historical_data_migration/common/lib/ |      |                       |
|-----------------------------------------------------|------|-----------------------|
| Name                                                | Size | Changed               |
| __pycache__                                         |      | 5/14/2024 8:32:43 PM  |
| data_loader_to_snowflake.py                         | 3 KB | 6/3/2024 6:48:40 PM   |
| file_utility.py                                     | 6 KB | 6/9/2024 9:07:05 PM   |
| snowflake_utility.py                                | 8 KB | 6/12/2024 11:42:31 AM |
| split_batch.py                                      | 4 KB | 4/4/2024 8:45:03 PM   |

| /eimdata/isdc/historical_data_migration/db2/exec/ |      |                       |
|---------------------------------------------------|------|-----------------------|
| Name                                              | Size | Changed               |
| __pycache__                                       |      | 6/17/2024 11:45:03 AM |
| app_process.py                                    | 8 KB | 6/4/2024 11:20:59 AM  |
| appMain.py                                        | 3 KB | 6/8/2024 10:40:16 PM  |
| db2_utility.py                                    | 3 KB | 5/15/2024 8:09:51 AM  |

| /eimdata/isdc/historical_data_migration/common/lib/ |      |                       |
|-----------------------------------------------------|------|-----------------------|
| Name                                                | Size | Changed               |
| __pycache__                                         |      | 5/30/2024 10:27:33 AM |
| data_loader_to_snowflake.py                         | 3 KB | 6/4/2024 7:07:33 AM   |
| file_utility.py                                     | 6 KB | 6/10/2024 11:41:18 AM |
| snowflake_utility.py                                | 8 KB | 6/13/2024 4:55:19 AM  |
| split_batch.py                                      | 4 KB | 6/4/2024 7:07:34 AM   |

| /eimdata/isdc/historical_data_migration/db2/exec/ |      |                       |
|---------------------------------------------------|------|-----------------------|
| Name                                              | Size | Changed               |
| __pycache__                                       |      | 5/30/2024 10:32:07 AM |
| 1                                                 | 1 KB | 6/18/2024 3:28:03 PM  |
| app_process.py                                    | 8 KB | 6/18/2024 3:28:03 PM  |
| appMain.py                                        | 3 KB | 6/10/2024 11:43:50 AM |
| db2_utility.py                                    | 3 KB | 6/4/2024 7:27:41 AM   |

The screenshot shows the Azure portal interface for managing role assignments. It displays a list of roles and their details, including the role name, description, and the service principal it is assigned to. The role 'AR\_PRD\_ISDC\_PRD\_DW\_OPTUM\_ROLE' is selected, and its properties are shown in the details pane. The service principal assigned is 'AZU\_DWS\_ISDC\_PRD\_SYS\_ADMIN...'.

Office\_work\_Url Azure\_Terraform Prom\_Grafana\_Mo... Github Actions Advisory Links Snowflake\_Training Terraform DEEP Migration ARM Size

2024-01-25 - Prod 2024-01-26 4:36pm 2024-02-20 3:26pm 2024-05-30 12:43pm 2024-06-26 7:21pm +

Databases Worksheets

Search objects ISDC\_PRD\_DW\_DB Settings AZU\_DWS\_ISDC\_PRD\_SYS\_ADMIN... ISDC\_PRD\_WORK\_XS\_WH (X-Small) Share

```
1 | select get_ddl('database','ISDC_PRD_DW_DB');
```

ISDC\_PRD\_DW\_DB  
ADR\_BILL  
ADR\_PRE\_CLM  
ADR\_XWLK  
BDR\_BILL  
BDR\_PRE\_CLM  
BDR\_XWLK  
INFORMATION\_SCHEMA  
LZ\_COMPAS  
LZ\_EDI\_837  
LZ\_FILES  
LZ\_FOX  
LZ\_ISDW  
SRC\_COMPAS  
SRC\_EDI\_837  
SRC\_FILES  
SRC\_FOX  
SRC\_ISDW  
UTIL

https://login.microsoftonline.com/organizations/oauth2/v2.0/authorize?redirect\_uri=https%3A%2F%2Fportal.azure.com%2Fsignin%2Findex%2F&... 🌐

Azure\_Terraform Prom\_Grafana\_Mo... Github Actions Advisory Links Snowflake\_Training Terraform DEEP Migration ARM Size

Sparql ocuds OCUDI databr ITSS 2 databr New Is Co United States Usage Account Workspaces +

UHG - Secure https://portal.azure.com/?feature.msals=true#view/Microsoft\_Azure\_CostManagement/Menu~/costanalysis/openedBy/AzurePortal

All Bookmarks

Microsoft Azure Search resources, services, and diets (G+)

sneidu21@optumcloud.us

Home > Cost Management: rg-isdc-nonprod

**Cost Management: rg-isdc-nonprod | Cost analysis**

Resource group

Scope: ISDC / rg-isdc-nonprod (change)

New tab Refresh Try preview Go to resource group ...

Introducing a new Cost analysis experience with smart views, multitasking, and more! To open the old view, select Accumulated costs.

Report on and analyze your cloud costs and review key insights to better understand and control spending patterns. From resources and the subscription hierarchy to the products and services you're using, each view breaks your cost down to help you understand what you're spending and where.

Recent All views Settings

Accumulated costs Daily costs Services

Name View Date range Filters

Smart views Reservations resources Services This month ...  
Resources Services This month ...  
Services Services This month ...

Learn more

Customizable views Accumulated costs Cost by resource Cost by service

Resource Service name This month ...  
Service name This month ...  
Service name This month ...

Accumulated costs Cost by resource Cost by service

|                 |                                                                                                                           |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|
| Request Status: | Request Complete                                                                                                          |
| Date Requested: | 7/1/2024 8:39:28 AM                                                                                                       |
| Last Modified:  | 7/1/2024 8:39:40 AM                                                                                                       |
| Date Closed:    | 7/1/2024 8:39:40 AM                                                                                                       |
| Application:    | MS                                                                                                                        |
| Environment:    | Prod                                                                                                                      |
| Role:           | MS Group Access                                                                                                           |
| Machine Name:   | N/A                                                                                                                       |
| Justification:  | Removing User from Group UHGRG_rg_isdc_dev_47d2500_CONTRIBUTOR via RG API Call after already being added to another group |
| Account Type:   | Primary                                                                                                                   |
| User ID:        | dcheema                                                                                                                   |

The screenshot shows the Rally software interface. At the top, there's a navigation bar with links like Home, Plan, Track, Quality, Portfolio, Reports, and a search bar. Below that is a header for 'Iteration Status' with tabs for Iterations, Sprint View, Save changes, Revert, List, Board, and Assemble.

The main area displays a 'Planned Velocity' of 100, an 'Iteration End' of 1 day, and 'Accepted' tasks at 0%. It lists 271 tasks in total. A 'View Details' button is present.

Below this is a 'Refining' section with status filters: Defined, In-Progress, Completed, Accepted, and Withdrawn. The 'In-Progress' filter is currently selected.

The feature backlog is shown as a grid of cards:

| Owner      | Feature   | Description                                        |
|------------|-----------|----------------------------------------------------|
| David Chen | U13139211 | Draft the HZT Identifiers and MRIS/EDP-53A Pilot   |
| David Chen | F14446    | Develop and Signoff Data Products                  |
| David Chen | U13139209 | No description                                     |
| David Chen | U13139201 | Create DEV database in Stratosphere Storage Tenant |
| David Chen | F14445    | Migrate by Dec 2024                                |
| David Chen | U13139202 | Feature                                            |
| David Chen | F14445    | V2 to Storage Te...                                |
| David Chen | U13139208 | Finalize inventory of                              |

An Subscription is how you buy and use Azure resources. A Subscription belongs to a Tenant.

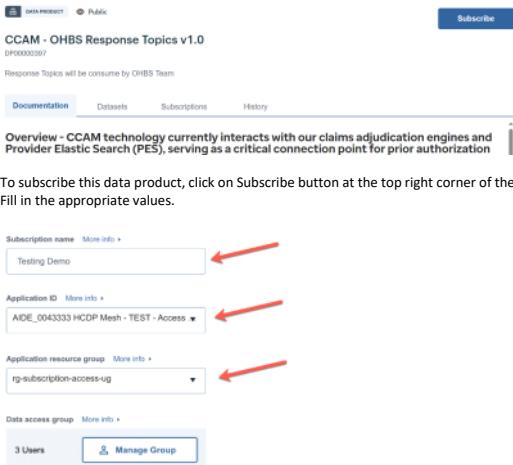
To subscribe a data product  
Search data catalog

Healthcare Platform Discover Products APIs & Data Community Learning Console CDI Data Catalog View all CCAM - DHRS Response Topics v1.2 Browse Data Assets Actions My Data ML Enrichments Analytics My Views

The search result will be displayed as shown below

④ DataProduct ⑤ Kafka  
**CCAM - OHBS Response Topics v1.0**  
DP0000000327  
© 2023 Oracle and/or its affiliates. All rights reserved. CC-BY-NC-ND  
Malik, Mohammed A.  Basat, Varun. 

Click on the product you're interested in and the data product detail will be displayed.



To subscribe this data product, click on Subscribe button at the top right corner of the page  
Fill in the appropriate values.

Subscription name: Testing Demo

Application ID: AIDE\_004333 HCDP Mesh - TEST - Access

Application resource group: rg-subscription-access-ug

Data access group: Manage Group

Subscription name: A unique identifier for the subscription to the data product. Enter correct subscription name to ensure that charges are incurred to the appropriate subscription  
 Application ID: The AIDE ID of the application that will have access to the data through this subscription  
 Application resource group: The specific application resource that will have access data through the subscription  
 Data access group: Manage user list & role assignments  
 Even though anybody with the Administrator or Contributor role can subscribe to a data product and add users to the Manage Group, it is highly recommended that the team selects a representative

---

#### Data Product association to Domain/Subdomain



To: Nowak, Bobbie-Jean; Koy, Kate  
 Cc: Carpenter, Lynne M.; Stratmann, Dawn M.; Bozada, Antoinette; Grothausen, Lisa M.; King, Angela M.; Simpson, Shantez C.; App, Kristin D.; Mayers, Erika A.; +290 others  
 Retention Policy: UHGlinbox (90 days)

Hello,

You are listed as an owner on a published or pending data product. Our recent release included the adoption of a new Domain/Subdomain taxonomy. As part of this release, we did our best to align your data product with a domain & subdomain. Please review your Data Product & determine if changes or additions to the domain and/or subdomain.

You can find your Data Products in My Data > Data Products tab. Select the ellipsis to edit your Data Product.



Reach out in the [Data Catalog Support](#) channel or join [office hours](#) with any inquiries. Thanks!

**Bobbie-Jean Nowak**  
 HCP Data Catalog - Product | Optum Technology  
 M 1-612-751-4677  
 bobbie-jean.nowak@optum.com

#### Expected Outcomes from OAS engagement

- Assess current state of V2 Tenant environment
  - Inventory of existing assets in the V2 environment
  - Understanding of usefulness and issues of the current data assets in the V2 Tenant environment
  - Optimization opportunities
  - Analyzed, rationalized, optimized data model for the Storage Tenant environment, focused on the end use consumption
- Setup target (Storage Tenant) environment
  - Secure AIDE ID (a.k.a. Account Manager)
  - Create resource group
  - Create a tenant with SDRP's assistance
  - Create Snowflake roles using appropriate functional roles
  - Add members to resource group
  - Create logical environments (e.g., DEV, TST, STG, SIT, PRD)
  - Create a database to contain application data
  - Create one or more schema(s), warehouses and resource monitors
  - Ensure Developer (functional role) has access permissions to the HCP Console
- Migrate V2 Tenant assets to Storage Tenant
  - Identify and design solution patterns
  - Develop and validate solution patterns
  - Leverage solution patterns to migrate V2 Tenant data assets to the Storage Tenant environment
- Secure permissions to access source and target environments
- Create like-schemas in the target (storage tenant) environment
- Work with <client name> SMEs to ensure their proper structure and names
- Generate create/clone statements in V2 tenant for object types (table, views, file formats and stored procedures)
- Execute create/clone statements (in the storage tenant, in the like-schema) in the target environment
- Work closely with <client name> SMEs to validate the objects created in the target environment and data migrated
- Modify procedures to point to the prod environments
  - Execute the stored proc. in the V2 tenant in the prod environment, followed by execute the other stored proc. in the storage tenant
- Validate results collectively with <client name> SMEs
- Reconnect existing processes

- Update existing processes, such as, ETL, replication, etc. to point to the new (Storage Tenant) environment
  - Work closely with <client name> SMEs to ensure all existing processes are now connected to the new environment
  - Create data products
    - Conduct pilot project
      - Create data products focused on consumption patterns using data design models
      - Validate data products
      - Make necessary updates
      - Setup appropriate access permissions and roles to expose data assets just enough and nothing more
      - Analyze results and retrofit lessons learned into the process
    - Create and register data products (only for data to be exposed)
      - Work closely with <client name> SMEs to create data products based on consumption patterns (recommended)
    - Implement Row level security & Column level data masking policies
      - Identify all PII, sensitive and protected data
      - Define a unique set of row/column level protection policies
      - Create a policy table to map roles to policies
      - Implement the policy (using stored procedures)
      - Create container roles in HCP Console and SECURE
    - Validate data products, policies, and container roles
  - Enable end users to use data products
    - End users subscribe data products
    - To subscribe a data product
      - Search HCP Data Catalog
      - Subscribe desired data product
      - Fill out required fields
        - You must fill out Subscription name, Application Id, and Application resource group to ensure that the cost is accrued by the correct subscription
      - Add Admins and Viewers to Data Access Group
      - End user group representative submits the subscription request
    - Data Product owner reviews the request and approves the subscription request
    - System sends an email to the requestor of request approval along with the URL for the product and other pertinent information
    - To access sensitive data, the representative makes request in SECURE to specific container(s) role to meet their use case needs
  - Login to Snowflake and select your Role
    - Follow SDRP instructions, provided in the email that you should have received from the system when you requested to subscribe a data product
  - Login to [Snowflake](#) platform using the login URL provided, and [AzureAD](#) login option
  - Select Switch Role
    - Find the role which matches the pattern AR\_PRD\_FIRSTNAME\_LASTNAME\_[UHG/OPTUM/DOMAIN]\_ROLE
  - Choose the warehouse option you have been provided
- Go Live
  - Create plan to go live
  - Communicate go live plan
  - Go live
- Sunset Existing V2 Tenant Assets
  - When the Storage Tenant has been stabilized and end consumers have signed off
  - Sunset existing V2 Tenant assets
- +++++

**Cloud Cost Estimate** to be used by <client name> to build a business case (CBA) to request funding includes the following:

- Expected costs for future A2 Tenant to Storage Tenant data migration including analysis, rationalization, optimization, and redesign of data products
- Potential costs of Snowflake compute (credits) and data to support consumption use cases
- Estimated personnel utilization costs
- ++++++ with Platform MFA (Desktop/Citrix/VDI) using active Directory Lync
- MSID with Platform MFA (Desktop/Citrix/VDI) using internal SSO only
- NIE other authentication methods
- How can Gurtej add funding?
- **Account: MRIS DA ISDC (AIDE\_0085977)**

The Master Data extract is a set of tables often used to report on the Quality of Care that members are receiving within C&S. It contains information on every member along with their Gaps in Care, their provider, and many other pertinent pieces of information.

#### Business Value Proposition / Justification

The MDE is a valuable field in reporting on C&S quality gap in care data as details on each member are included. Not only specifics about the member such as age, gender, etc., but also the care they are receiving and from whom. This data is used in several different ways to provide information used to help increase the care of our members as well the value we are seen by our customers, the states, and CMS.

#### Current Business Use cases

##### Architecture

Architecture diagrams for the MDE can be found on the Stars Cloud SharePoint site. For more information and access instructions, please submit a ticket to the STAR Data Management Quality and Reporting\_Primary Service Now Group.

##### Source System of Record

- The Primary source of the C&S MDE is the data in CSPRO and the MLD.

##### Access Guide

For information on accessing directly to the Snowflake Storage Tenant, please submit a ticket to the STAR Data Management Quality and Reporting\_Primary Service Now Group.

##### Data Freshness

The C&S MDE is updated twice a month. That dates may shift slightly due to source data quality and availability but approximate timings are the 10th and 25 day of each month.

##### Support Process / Feedback

How to Report Issues: Submit MDE defects or other issues by using Service Now. You may submit tickets to the STAR Data Management Quality and Reporting\_Primary Service Now Group. Please be sure to indicate that your issue is with the Snowflake version of the MDE Enhancements are requested through Ahal. General questions can be asked in office hours held on the 2nd and 4th Wednesday of each month. You may add yourself to the Stars MDE Users Distribution List to receive release notes and other updates.

+++++

**My Data**

| <a href="#">Data Assets</a>                                                                               | <a href="#">Data Products</a> | <a href="#">Datasets</a> | <a href="#">Subscriptions</a> | <b>Access Groups</b> |
|-----------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------|-------------------------------|----------------------|
| Access group in which you are Viewer or Admin. You can learn about different roles <a href="#">here</a> . |                               |                          |                               |                      |

Click Create Access Group

New Access Group X

**Application ID**

**Resource Group**

**Access Group Name**

Cancel Next

Select Application ID and Resource Group  
Enter Access Group Name  
Click on Next

dave-cheema-practice-access-group

UHGWM110-017761 /

## 1. Search user

## 2. Select role

 Viewer  Admin

## 3. Add role to access group

Add Role

Search user, Select role (Viewer or Admin)  
Click on Add Role

When all users with intended roles are added, click on

| <b>Data Catalog</b>                                                                                                                                                                                                                                                                          |  | Search Data Assets, Data Products, Datasets, and more... |  |  |  |  |  | Browse | Data Assets | Actions | My Data | ML Enrichments | Analytics | My Views |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------|--|--|--|--|--|--------|-------------|---------|---------|----------------|-----------|----------|--|--|--|--|--|--|
| dave-cheema-practice-access-group                                                                                                                                                                                                                                                            |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| UHGWM110-017761 /                                                                                                                                                                                                                                                                            |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 10px; color: inherit; font-size: 1em;">Cancel</span> <span style="background-color: #0070C0; color: white; border: 1px solid #0070C0; padding: 2px 10px; border-radius: 10px; font-weight: bold;">Finish Setup</span> |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| 1. Search user                                                                                                                                                                                                                                                                               |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <input type="text" value="Shin, John S"/>                                                                                                                                                                                                                                                    |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| 2. Select role                                                                                                                                                                                                                                                                               |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <input checked="" type="checkbox"/> Viewer <input checked="" type="checkbox"/> Admin                                                                                                                                                                                                         |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| 3. Add role to access group                                                                                                                                                                                                                                                                  |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <span style="background-color: #0070C0; color: white; border: 1px solid #0070C0; padding: 2px 10px; border-radius: 10px; font-weight: bold;">Add Role</span>                                                                                                                                 |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| Search user, Select role (Viewer or Admin)<br>Click on Add Role                                                                                                                                                                                                                              |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| When all users with intended roles are added, click on                                                                                                                                                                                                                                       |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 10px; color: inherit; font-size: 1em;">Cancel</span> <span style="background-color: #0070C0; color: white; border: 1px solid #0070C0; padding: 2px 10px; border-radius: 10px; font-weight: bold;">Finish Setup</span> |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| 1. Search user                                                                                                                                                                                                                                                                               |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <input type="text" value="Shin, John S"/>                                                                                                                                                                                                                                                    |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| 2. Select role                                                                                                                                                                                                                                                                               |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <input checked="" type="checkbox"/> Viewer <input type="checkbox"/> Admin                                                                                                                                                                                                                    |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| 3. Add role to access group                                                                                                                                                                                                                                                                  |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| <span style="background-color: #0070C0; color: white; border: 1px solid #0070C0; padding: 2px 10px; border-radius: 10px; font-weight: bold;">Add Role</span>                                                                                                                                 |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| Admin Role:                                                                                                                                                                                                                                                                                  |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| Click on Finish Setup                                                                                                                                                                                                                                                                        |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |
| +++++<br>+++++                                                                                                                                                                                                                                                                               |  |                                                          |  |  |  |  |  |        |             |         |         |                |           |          |  |  |  |  |  |  |

| NAME                  | SOURCE | OWNER            | CREATED     |
|-----------------------|--------|------------------|-------------|
| CCC_PRD_CMPT_DB       | Local  | AZU_DWS_SYSADMIN | 4 days ago  |
| DEMO_DB               | Local  | SYSADMIN         | 3 years ... |
| DWS_ENV_DEVOPS_DB     | Local  | AZU_DWS_SYSADMIN | 3 years ... |
| DWS_ENV_OPERATIONS_DB | Local  | AZU_DWS_SYSADMIN | 2 years ... |
| SNOWFLAKE             | Share  | —                | 3 years ... |
| SNOWFLAKE\$GDS        | Local  | ACCOUNTADMIN     | 1 year ago  |
| SNOWFLAKE_SAMPLE_DATA | Share  | ACCOUNTADMIN     | 3 years ... |
| UBLIA_TST_ISDC_DEV_DB | Local  | AZU_DWS_SYSADMIN | 3 weeks...  |

- Is there a way where you wouldn't have to go thru in the Governance approval process every time there is even a small change to the table (dataset) structure, especially in the initial stages? Governance approval for which part? Registration or Subscription? What types of changes are you referring to? Depending on the type of change, a full vs light governance review will be initiated. Here is more info on those changes

[Edits to a Published Data Product - Data Catalog | HCP Docs \(uhg.com\)](#)

[Subscription Impacts from Data Product Edits - Data Catalog | HCP Docs \(uhg.com\)](#)

#### Governance approval for which part?

When a table is dropped and recreated

When a new table is added

#### Registration or Subscription?

Registration

#### What types of changes are you referring to?

Any time a change is made to a dataset - add/remove a column

Depending on the type of change, a full vs light governance review will be initiated.

Which scenarios that do not trigger the Data Product Approval workflow?

#### Suggestions for the next release

- During the initial tenant migration, tables are added/removed; tables are altered. It seems that the Tier 1 Governance is getting triggered every time. There should be a way to turn off the Data Product Approval workflow triggering mechanism, especially during development and testing phases.
- The search should be simpler. You should be able to easily traverse from Account Manager (AIDE ID) to dataset to field and back

**Data Catalog**

View all  Search Data Assets, Data Products, Datasets, and m...

Browse Data Assets Actions My C

Register your data product 1 Description 2 Data & Use 3 Ownership & Alignment 4 Data Classification 5

1 Instructions

Product visibility in data catalog [More info ▾](#)

Public

Product Name [More info ▾](#)

DC-Test-Data-Product

Brief product description [More info ▾](#)

This is a test data product to print all relevant attributes it captures.

Max 400 characters

Product Documentation [More info ▾](#)

**Overview**  
It helps achieve visibility into test data

**Business Value Proposition / Justification**  
It helps to streamline the provisioning process

**Current Business Use cases**  
Billing data and Operational insights

**Architecture**  
Data is sent to it from billing source and operational output

**Source System of Record**  
Billing systems

**Access Guide**  
Use SSO AzureAD

**Data Freshness**  
Daily

**Support Process / Feedback**  
# Useful Links

**Overview**  
It helps achieve visibility into test data

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**Architecture**  
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**Useful Links**

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Register your data product

1 Description

2 Data & Use

3 Ownership & Alignment

4 Data Classification

5 Review & ...

Datasets

 Select Dataset

 Search in Datasets

| Business Name                                                                                    | Technical Name | Environment | Platform  |
|--------------------------------------------------------------------------------------------------|----------------|-------------|-----------|
| BILLING_DALLAS  | BILLING_DALLAS | TST         | Snowflake |

Total 1 item < 1 > 10 / page ▾

DATA RESTRICTIONS

Are there deidentification restrictions with the data in this Data Product?  More info 

Yes

No

Are there aggregation restrictions with the data in this Data Product?  More info 

Yes

No

Are there research restrictions with the data in this Data Product?  More info 

Yes

No

Does this data product have offshore restrictions?  More info 

Yes

No

Is external access to this Data Product appropriate and permitted by underlying contracts governing this data?

Yes

No



Stop

Scroll the content in the selected area



## Register your data product

1 Description   2 Data & Use   3 Ownership & Alignment **4 Data Classification**   5 Review & Submit

Domains & Subdomains ⓘ

Administrative - Financial Data x

HCP package (optional) ⓘ More info ▾

Select Option

HCP subpackage (optional) More info ▾

Select Option

Technical owner More info ▾

Ubele, Douglas J x

Technical steward More info ▾

Saripirala, Sreenadha Reddy x

Business Steward More info ▾

Smith, Christopher B x

Line of business More info ▾

Medicare&Retirement x

Application ID (optional) More Info ▾

UHGWM110-017761 MRIS Enterprise Data Platf...

Population ⓘ More Info ▾

Global x

Back

Feedback

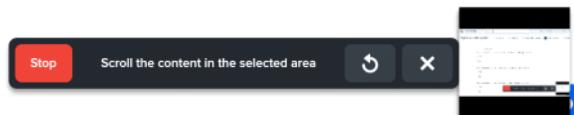
## Register your data product

1 Description 2 Data &amp; Use 3 Ownership &amp; Alignment 4 Data Classification 5 Review

## PROTECTED INFORMATION

Does this data product contain Personally Identifiable Information (PII)?  More info ▾ Yes NoDoes this data product contain Protected Health Information (PHI)?  More info ▾ Yes NoDoes this data product contain PCI (Payment Card Industry Data)?  More info ▾ Yes No

## CONFIDENTIAL INFORMATION

Does this data product contain confidential/proprietary business information?  More info ▾ Yes NoDoes this data product contain licensed data?  More info ▾ Yes NoAttach glossary terms (Optional)  More info ▾ Add glossary termAttach tags (Optional)  More info ▾ Add tag[Back](#)

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- **Tier 2 Governance** - If approval review is escalated from Tier 1, one user in the Tier 2 Governance group\*
- Tier 2 - LCRA & EIS

RE: DUR HCP Follow Up for Access to MRIS DA-Exela-AUDIT

 Cor: Rosemary R  
To: Singh, Gurtej; Maggs, Robert E  
Cc: Smith, Christopher B; Deleon, Omar D  
Retention Policy: UHD3Year (3 years)

Reply | Reply All | Forward | ...  
Fri, 8/10/2024 5:29 PM

Good afternoon, Folks,

Gurtej, thank you for walking us through our first HCP DUR review and approval process on the access request to MRISDA - EXELA-AUDIT. We reviewed your subscription request # DS00000745 for the Data Analytics Team. I reached out to Anikita Nagpal to see if she could help me understand a few things from our first HCP approval review like:

- Why the email never arrived? – We tested a few scenarios with the same results, so she's going to investigate the backend config with someone.
- Can a backup approver be added? – She tried to add Rob as a backup approver, but there may be more setup involved for 2 approvers. More to come on this. Currently I am the only Tier 1 Additional Approver
- Why we only received one request for approval when 6 system access requests were submitted? She added Tier 1 Additional approvers to the first 4, but #5 & #6 will need more investigation. FYI, I found the others by selecting Data Catalog / View All / MRIS

| Subscription                    | Data Product                                  | Pending Approval from Doug                                                                                                                                      |
|---------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. ISDC CONSUMPTION –           | MRIS-PRE-ADJUDICATED-CLAIMS-837-NON-PROD V1.1 | In Access Details I had a message - You must have an active viewer role in the Access Group tied to this subscription to be granted access to the data product. |
| 2. MRISDA-COMPAS-OPS            | COMPAS                                        | If you have an active viewer role, you will receive email communication when access has been provisioned. -- I've asked about this too.                         |
| 3. MRISDA-XWALK-CLAIM           | MRIS-XWALK-CLAIM NON-PROD                     | Approved                                                                                                                                                        |
| 4. MRISDA-EXELA-AUDIT           | MRIS-EXELA-AUDIT NON-PROD                     | Approved                                                                                                                                                        |
| 5. MRISDA-BILLING-NON-PROD v1.0 | MRISDA-BILLING NON-PROD v1.0                  | Approved - DS00000745                                                                                                                                           |
| 6. MRISDA-PROVIDER-RPT          | " "                                           |                                                                                                                                                                 |

I created a log in case it's needed. Thanks again. Gurtej we're looking forward to your overview. It would be very helpful to see the setup with your recommended steps for review. Have a good weekend all!

Thank you.

Re: [Original Appointment](#)

From: Corr, Rosemary R

Sent: Thursday, August 8, 2024 2:06 PM

To: Corr, Rosemary R; Singh, Gurtej; Maggs, Robert E

Cc: Smith, Christopher B; Deleon, Omar D

Subject: DUR HCP Follow Up for Access to MRIS DA-Exela-AUDIT

When: Thursday, August 8, 2024 4:00 PM-4:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Microsoft Teams Meeting

<https://data.hcp.ung.com/data-forge/approvals/urn:li:dSubscriptions-0c4a6e14-2276-43ca-a89f-8d80f7890fcf/urn:li:taskGroup:661b7bd9-e0f0-4683-90b3-08fe4324040a>

Hi Gurtej,

We'd like to discuss the review and approval process for this access request to Paper Claims data. I'm cc'ing Brian since he is OOO until Monday.

+++++  
isdc consumption  
DS00000000

[Summary](#)   [Approvals](#)   [Access details](#)   [Access group](#)

mrss-isdc-consumption

AIDE\_0086054 (AIDE\_0086054) / rg-isdc-consumption

Filter by keyword

| User Name                  | ID       | MB ID | Access group status | Status date | Country | Department               | Role   |
|----------------------------|----------|-------|---------------------|-------------|---------|--------------------------|--------|
| Palls, Sandeep             | spals2   |       | Approved            | 08/08/2024  | USA     | CI Advisory and Imple... | Viewer |
| MHshead, Doug              | dshd14   |       | Approved            | 08/08/2024  | USA     | CI Advisory and Imple... | Viewer |
| Nagulapati, Veeranjaneyulu | vngulap  |       | Approved            | 08/08/2024  | USA     | CI Advisory and Imple... | Viewer |
| Cheema, Devi               | dccheema |       | Approved            | 08/08/2024  | USA     | CI Advisory and Imple... | Viewer |

isdc consumption

DS00000000

[Summary](#)   [Approvals](#)   [Access details](#)   [Access group](#)

You must have an active viewer role in the Access Group tied to this subscription to be granted access to the data product. If you have an active viewer role, you will receive email communication when access has been provisioned.

+++++

| ID       | Name                                                                                      | Defects | Schedule State |
|----------|-------------------------------------------------------------------------------------------|---------|----------------|
| US1401-  | PILOT: Validate Data Subscription                                                         |         |                |
| TA494-   | MRIS-XWALK-CLAIM: Validate and sign-off End User Access                                   |         |                |
| TA494-   | MRIS-PA-CLAIM-837: Validate and sign-off Gene Moffit's Access                             |         |                |
| US1402-  | PILOT: Validate MSTR Subscription to ISDC Data Objects                                    |         |                |
| TA493-   | Ensure MSTR has access to Billing Dallas in compute tenant through the service account id |         |                |
| TA494-   | Ensure MSTR has access to D_CPT_LOOK in compute tenant through the service account id     |         |                |
| TA493-   | Report sample non-prod MSTR report to Compute Tenant and validate EDP data in MSTR        |         |                |
| US1401-  | Migrate additional EDP Data Object and Workflows to Test based on EDP 7/30 Release        |         |                |
| US1404-  | Update Existing EDP Data Object and Workflows based on EDP 7/30 Release                   |         |                |
| US1401-  | EDP Data Object Migration: Workflow Validation                                            |         |                |
| US140400 | Formal Sign-off from EDP SMEs on Data Objects Inventory in Test Database                  |         |                |
| US140401 | Formal Sign-off from EDP SMEs on ADF Workflow Executions in Test                          |         |                |

## Snowflake Query Performance Tune-Up Tips

Optimizing Snowflake query performance is crucial for efficient data analysis and cost-effectiveness. Here are some key strategies to enhance your query speed:

## Understanding Your Query

- **Profile Your Query:** Use Snowflake's built-in profiling tools to identify performance bottlenecks.
- **Analyze Query Plan:** Understand how Snowflake executes your query to pinpoint areas for improvement.
- **Identify Data Skew:** Uneven data distribution can significantly impact performance.

## Data Modeling and Storage

- **Clustering:** Create clustered indexes on frequently queried columns to improve data access.
- **Data Compression:** Utilize appropriate compression formats to reduce storage costs and improve query performance.
- **Partitioning:** Divide large tables into smaller, manageable partitions for better query performance and data management.
- **Data Types:** Choose data types wisely to optimize storage and computation efficiency.

## Query Optimization Techniques

- **Query Pruning:** Use filters effectively to reduce the amount of data scanned.
- **Join Optimization:** Consider join types (inner, left, right, full), join order, and leveraging indexes.
- **Subquery Optimization:** Convert subqueries to joins or CTEs where possible.
- **Aggregation Optimization:** Use GROUP BY and HAVING clauses efficiently.
- **Window Functions:** Utilize window functions for calculations across rows.
- **Materialized Views:** Create pre-calculated views for frequently used query results.
- **Query Caching:** Leverage Snowflake's query cache to reuse query results.

## Warehouse Management

- **Rightsizing Warehouses:** Adjust warehouse size based on workload patterns to optimize cost and performance.
- **Scaling Warehouses:** Use auto-scaling or manual scaling to handle varying workloads.
- **Query Acceleration Service (QAS):** Consider using QAS for accelerating frequently executed complex queries.

## Additional Tips

- **Leverage Snowflake's Features:** Explore features like Time Travel, Undrop, and Clone for data management and recovery.
- **Monitor and Analyze Performance:** Continuously track query performance and identify optimization opportunities.
- **Test and Iterate:** Experiment with different approaches to find the optimal solution for your specific workload.

## Example Query Optimization

SQL

```
-- Before optimization
SELECT *
FROM large_table
WHERE column1 = 'value1'
AND column2 > 1000;

-- After optimization
SELECT column1, column2, ... -- Select only necessary columns
FROM large_table
WHERE column1 = 'value1'
AND column2 > 1000
ORDER BY column2 -- Add an index on column2 for faster filtering
LIMIT 1000; -- Limit results to improve performance
```

## Additional Resources

- Snowflake performance guidance: <https://docs.snowflake.com/en/guides-overview-performance>
- Snowflake query optimization: <https://select.dev/posts/snowflake-query-optimization>
- Snowflake query optimization II: <https://www.choasgenius.io/blog/snowflake-performance-tuning/>

### Best practices for Snowflake query optimization:

- Understand your data and query pattern to design efficient queries, usage of indexing, partitioning, and clustering
- Use appropriate filters to filter out search results based on criteria such as date ranges, specific columns, or specific values
- Even though Snowflake supports automatic and manual indexing, consider creating indexes on columns that are frequently used in WHERE clauses or JOIN conditions
- Partition and cluster your data based on specific columns can enhance query performance
- Optimize join operations when working with large tables, e.g., use appropriate join strategies such as broadcast joins or hash joins based on the size of your tables and the available resources
- Leverage query optimization techniques, e.g., query hints, query rewriting, and query profiling
- Use full-text search to search for specific words or phrases within your data
- Avoid complex joins, especially for large tables
- Use join types appropriately (inner, left, right, full), join order, and leveraging indexes
- Consider converting subqueries to joins or CTEs where possible
- Utilize window functions for calculations across rows
- Adjust warehouse size based on workload patterns to optimize cost and performance
- Use auto-scaling or manual scaling to handle varying workloads
- Utilize query profiling to analyze the execution plan of a query and identify areas for optimization
- Optimize data storage and organization to properly partition and cluster your data
- Use appropriate data types can impact query performance. Avoid unnecessarily large data types

Note: Query optimization is an iterative process. Regularly review and fine-tune your queries, indexes, and data organization to achieve optimal performance

### References:

- Snowflake search optimization service: <https://docs.snowflake.com/en/user-guide/search-optimization-service>
- Snowflake Search Optimization: <https://community.snowflake.com/s/article/Search-Optimization-When-How-To-Use>
- Snowflake Strategies for Optimization: <https://articles.analytics.today/best-strategies-for-optimizing-snowflake-search-services>

**BILLING\_NOC**

View all | **BILLING\_NOC** |

↳ UBLIA,TST\_ISDC,TST,DB > ↳ SRC\_COMPAS  
BILLING\_NOC

↳ ISDC,DEV,DW,DB > ↳ SRC\_COMPAS  
BILLING\_NOC

↳ ISDC,PRD,DW,DB > ↳ SRC\_COMPAS  
BILLING\_NOC

↳ p\_dtz > ↳ compas\_billing  
BILLING\_NOC

↳ ISDC,DEV,WORK,DB,DB > ↳ WORK\_SCHEMA  
BILLING\_NOC

↳ UBLIA,TST\_ISDC,DEV,DB > ↳ SRC\_COMPAS  
BILLING\_NOC

+++

| Falla,Sandeep             | spfala2   | Approved | 08/08/2024 | USA | OI Advisory and Implementation | Viewer |
|---------------------------|-----------|----------|------------|-----|--------------------------------|--------|
| Whitehead,Doug            | dshn04    | Approved | 08/08/2024 | USA | OI Advisory and Implementation | Viewer |
| Nagulapati,Veeranjaneyulu | vnagulap  | Approved | 08/08/2024 | USA | OI Advisory and Implementation | Viewer |
| Cheema,Dave               | dcheema   | Approved | 08/08/2024 | USA | OI Advisory and Implementation | Viewer |
| Prasad,Anil               | aprasal13 | Approved | 08/08/2024 | USA | Medicare & Retirement Ins Sol  | Admin  |
| Majorossy,Edward          | emajoros  | Approved | 08/08/2024 | USA | Medicare & Retirement Ins Sol  | Admin  |
| Saripala,Sreenatha Reddy  | stsrp1r   | Approved | 08/08/2024 | USA | Medicare & Retirement Ins Sol  | Viewer |
| Moffitt,Gen               | gmoffitt  | Approved | 08/09/2024 | USA | OI Advisory and Implementation | Viewer |
| Bhattarai,Gandhi R        | gbhatt11  | Approved | 08/08/2024 | USA | OI Advisory and Implementation | Viewer |
| Gurram,Jagannatha R       | jgurram1  | Approved | 08/08/2024 | USA | OI Advisory and Implementation | Viewer |

**Admins**

P Prasad,Anil M Majorossy,Edward

**Business Sponsor**

L Linden, Andrew R

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| ID                                                               | Name                                                      | Defects  | Schedule State | Owner       |
|------------------------------------------------------------------|-----------------------------------------------------------|----------|----------------|-------------|
| U51401                                                           | (Continued) PILOT: Validate Data Subscription             | 1        | P              | Dave Cheema |
| U51402                                                           | PILOT: Confirm Sign-off from EDP End-users                | 1        | P              | Dave Cheema |
| U51420                                                           | Complete Setup of Production Data Products in HCP         | 1 Active | P              | Dave Cheema |
| TA498-MRIS-BILLING                                               | MRIS-BILLING                                              | -        | C              | Dave Cheema |
| TA498-MRIS-COMPAS-GPS                                            | MRIS-COMPAS-GPS                                           | -        | C              | Dave Cheema |
| TA498-MRIS-EXELA-AUDIT                                           | MRIS-EXELA-AUDIT                                          | -        | C              | Dave Cheema |
| TA498-MRIS-PRE-ADJ-VALIDATED-CLAIMS-B37                          | MRIS-PRE-ADJ-VALIDATED-CLAIMS-B37                         | -        | C              | Dave Cheema |
| TA498-MRIS-PROVIDER-RPT                                          | MRIS-PROVIDER-RPT                                         | -        | C              | Dave Cheema |
| TA498-MRIS-XWALK-CLAIM                                           | MRIS-XWALK-CLAIM                                          | -        | D              | Dave Cheema |
| DE32-CH_VIEW inclusion in HCP Data Catalog                       | CH_VIEW inclusion in HCP Data Catalog                     | -        | P              | Dave Cheema |
| U51420-Completed Subscription Setup for Production Data Products | Completed Subscription Setup for Production Data Products | 1        | P              | Dave Cheema |
| TA498-Complete subscription setup DPs under Gurjeet's AIDE       | Complete subscription setup DPs under Gurjeet's AIDE      | -        | D              | Dave Cheema |
| TA498-Complete subscription setup DPs under Doug's AIDE          | Complete subscription setup DPs under Doug's AIDE         | -        | D              | Dave Cheema |

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**MRIS-BILLING v1.0**

**Approval Progress**

Product Summary Change Requests History

| Approver Group     | Approval Status | Status Date | Approvals Received/Total | Overall Approval Status |
|--------------------|-----------------|-------------|--------------------------|-------------------------|
| Package Owners     | Pending         |             | 0 of 1                   | Pending Approval        |
| Morten,Matthew T   | Pending         |             |                          | Submitted               |
| Gupta,Kanshir      | Pending         |             |                          | Pending                 |
| Onail,Nileen       | Pending         |             |                          | 8 days                  |
| Business Owners    | Approved        | 08/27/24    | 8 of 8                   | Your Approver Group     |
| Technical Owners   | Approved        | 08/27/24    | 8 of 8                   | Your Approval Status    |
| Tier1 Governance   | Pending         |             | 0 of 1                   | Approved                |
| Revers,Riley R     | Pending         |             |                          |                         |
| Pallepalli,Madhuri | Pending         |             |                          |                         |
| Nagpal,Arikita     | Pending         |             |                          |                         |
| Koy,Kate           | Pending         |             |                          |                         |

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Ed, Please find below the names of onsite folks to be added to the Access Group for the **UCEE-UHC Marketing Dataset v1.0** data product:

- Cheema, Dave [dave.cheema@optum.com](mailto:dave.cheema@optum.com)
- Palla, Sandeep [sandeep.palla@optum.com](mailto:sandeep.palla@optum.com)
- Madapati, Srikanth [srikanth\\_madapati@optum.com](mailto:srikanth_madapati@optum.com)
- Shin, John S [john.shin@optum.com](mailto:john.shin@optum.com)
- Boinpally, Harish [harish\\_boinpally@optum.com](mailto:harish_boinpally@optum.com)
- Byrisetti, Nagulapati, Veeranjaneyulu [veeranjaneyulu\\_nagulapati@optum.com](mailto:veeranjaneyulu_nagulapati@optum.com)
- isdc\_prd\_dw [isdc\\_prd\\_dw@optum.com](mailto:isdc_prd_dw@optum.com)

Please let me know if you have any questions/concerns. Thank you.

Regards,  
Dave Cheema

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## My Data

Data Assets    Data Products    Datasets    Subscriptions    Access Groups

### Subscriptions

Subscriptions that you have access to or that you are admin of.

Show only admin role     Search in Subscription...

| Subscription Name        | Product Name                                             | Status | Access details               | Access Group | Start Date | End Date   | Approvals |
|--------------------------|----------------------------------------------------------|--------|------------------------------|--------------|------------|------------|-----------|
| UCEE-ISDC-SUB-D900000000 | UCEE-UHC MARKETING                                       | Draft  | rg-isdc-dev-47d2500          |              | 07/31/2024 | 07/31/2025 |           |
| ++++++                   |                                                          |        |                              |              |            |            |           |
| US1401-...               | (Continued) PILOT: Validate Data Subscription            |        | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| US1402-...               | PILOT: Confirm Sign-off from BDP End-users               |        | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| US1420-...               | Complete Setup of Production Data Products in HCP        |        | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | MRS-BILLING                                              | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | MRS-COMPAIS-OPS                                          | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | MRS-HEALTH-AUDIT                                         | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | MRS-PRE-ADMITTED-CLAIMS-EST                              | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | MRS-PROVIDER-RPT                                         | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | MRS-SWALW-CLAM                                           | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | Receive all approvals for the Data Product Setup in HCP  | -      | <br><br><br><br>             | Dave Cheema  |            |            |           |
| DE32-...                 | CH_VHN inclusion in HCP Data Catalog                     | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| US1420-...               | Complete Subscription Setup for Production Data Products |        | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | Complete Subscription setup DPs under Gunter's AIDE      | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |
| TA998-...                | Complete subscription setup DPs under Doug's AIDE        | -      | <br><br><br><br><br><br><br> | Dave Cheema  |            |            |           |

\* How will the data be consumed?

Data Assets and Data product and how do we Associate a data product with an Asset

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Define Unique Cloud Solution Patterns based on Analysis of Current State Solution

Analysis of Existing Solution Patterns for Each Data Source

**Define Scope of Representative Pilot Prototype**

Design & Develop Representative Pilot Prototypes for In-Scope Data Processes

**Design the End-to-end Data Pipeline for Each Data Source**

Design the ADF Workflow Management Framework to Control Execution of Future Data Pipelines

Deploy Cloud Tech Stack for Pilot Prototype

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Here are some tips to help you find junior full stack developer jobs:

1. Job Search Engines: Utilize popular job search engines like Indeed, Glassdoor, and LinkedIn to search for junior full stack developer or "entry-level full stack developer" to narrow down your search.
2. Company Websites: Visit the career pages of companies you are interested in. Many companies post their job openings directly on their websites, so check for any junior full stack developer positions available.
3. Networking: Connect with other professionals in the field through networking events, conferences, or online communities. They may have insights or job leads for junior full stack developer positions.
4. Online Job Boards: Explore online job boards that are specific to the tech industry, such as Stack Overflow Jobs, GitHub Jobs, or AngelList. These platforms often have a dedicated section for junior or entry-level positions.
5. Internships or Apprenticeships: Consider applying for internships or apprenticeships in companies that offer such programs. This can be a great way to gain practical experience and potentially transition into a full-time junior full stack developer role.
6. Freelancing Platforms: Consider joining freelancing platforms like Upwork or Freelancer. While these platforms may not offer traditional full-time positions, they can provide opportunities to gain experience and build your portfolio.
7. Industry-specific Websites: Check industry-specific websites or forums that cater to developers, such as Hacker News or Dev.to. These platforms often have job boards or dedicated sections for job postings.

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Just had an interview with Prem,

His resume looks very impressive and I was excited to speak with him. However, when I started asking him questions, his answers were less than thrilling. The following are a few examples:

1. He mentioned Snowflake at least 10 times, but it is not anywhere on his resume
2. I asked him how do you create a stored procedure in Snowflake? His response was I only created views in Snowflake
3. I asked him if he had done any performance tuning, he said he has not done it
4. I asked which database types he has experience with, It was only MS. SQL Server
5. He could not articulate end-to-end process for a data migration project
6. I asked him what is his sweet spot, his response was BSA (Business Solution Analyst) and ADF
7. He does not have any experience with Azure Functions and light experience with Azure Logic Apps
8. He does have good experience with ADF, he was able to articulate ADF pipelines

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**OCCS Database and Views:**

|                                        |
|----------------------------------------|
| CDW_AARP_HEALTH_UHC_BASE_VIEW_SC       |
| Views                                  |
| AARP_UHC_SALES_INTERACTIONS            |
| AARP_UHC_SALES_INTERACTION_TRANSCRIPTS |
| AARP_UHC_SRVC_INTERACTIONS             |
| AARP_UHC_SRVC_INTERACTION_SCRIPTS      |

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**Data Product - Overview**

**Data Product Readiness Checklist**

**Data Product Registration Questions**

**Data Product Subscription**

The **Contract Effective Date** on the **Quote Line Editor** is either in the past or before the Close Date.

**Action:** If either date is incorrect, update the Close Date here on the opportunity or navigate to the Quote Line Editor and update the Contract Effective Date.

From <<https://optumgrowth.lightning.force.com/lightning/r/Opportunity/0065d0000019u5VGAAY/view>>

# Work Plan

Wednesday, January 10, 2024 10:30 AM

## **Objective:**

- Create a repeatable process to copy data from Apache to Snowflake

## **Challenges:**

- Rows don't contain transaction date, instead, they're in the file/directory name
- Column delimiter varies and sometimes not even present. The default column delimiter is: ' '

## **Tasks:**

- Copy source data - > Azcopy or some other command that is easy to use and repeatable
- Drop copied data into designated target blob storage
- Identify column delimiter (default: FIELD\_DELIMITER=' ')
  - Ensure that target table exists in database: ISDC\_DEV\_WORK\_DB\_DB and schema: WORK\_SCHEMA
  - If it is not, copy the table definition from the source Apache database and create the table in the target database/schema
- Use Field\_Delimiter in the data import
- Setup ADF job(s) to -
  - Add field\_delimiter
  - Extract transaction date
  - Add a field to the data load and populate it with the extracted transaction date
- Ensure/create a Snowflake-Blob interim staging area that Snowflake needs to import data
- The whole process to be scripted and be automatable

# MRIS Security

Tuesday, April 9, 2024 9:26 PM

**ASK:** Dave – Please take point on putting together a draft of the inventory of security features in the ask. Make sure to call out responsibilities for MRIS and Enterprise Teams in Optum (i.e EIS, HCC, SDRP, etc)

## Liv's ask:

- I need you to provide an overview of the security infrastructure and adherence to Optum standards for our IS Data Cloud work. This should also include a summary of what our obligations/responsibilities vs Optum Tech obligations/responsibilities.
  - This is not a question of whether we are meeting Optum standards. It is assumed we are meeting the required standard and will be in a position to support it throughout the migration and eventual transition.
  - I want to make sure everyone has a common awareness of what we are doing to ensure we meet our security obligations. There is a lot of volatility in the environment so I want to make we are aligned.
  - I would like this group to be the intended audience. We can add others if necessary.
- 
- Are we following the right process? What is the level of security we're at from Microsoft?
  - Consolidate SDRP offering and HCP/HCC folks offerings
  - Formalize into slide deck
  - Review with SDRP and HCC team
  - Review with MRIS leadership
  - Reach out to SDRP and HCC what they have from security stand point
  - Level of guidelines from Azure and Snowflake?
- 

## HCP Security

- Increased enterprise-wide observability
- Identifying commonly used HCP tools and solutions
- Providing clear understanding of engineers role in reducing risk.

## Risk and Vulnerability Reduction

Reduce application security risks and costs with clear, consumable security practices and enhanced engineering experience by enabling security hygiene best practices through:

- There are no Azure security levels. Instead, there are security scores that we get from Microsoft Defender for Cloud.
- HCP provides Cybersecurity Awareness, e.g., phishing scams
- Application Security Policy identifies EIS requirements that must be addressed
- Data Management services
- Strategic Data Repository Platform
- Enterprise monitoring and security logging for auditing
- EIS review and approval for any new components added to the cloud solutions
- EIS mandated Security Compliance and Data Protection
  - Public cloud applications may transmit or host PHI or PII data ONLY AFTER they have received Enterprise Information Security (EIS) endorsement AND that appropriate security controls are in place for their solution hosting this data. More information is located here: [Production Data Usage](#)
  - Shared responsibility security model between consumers of public cloud and the specific cloud service provider used
- Provides threat modeling guidelines such as, identification and mitigation of threats
- Provides Public Cloud Security Playbook to ensure that your products are offerings are secure and protected

## The Security Intake Criteria assists in determining the readiness of an application for public cloud

- Data moving to cloud or processed in cloud has the contractual and legal permission to be hosted in cloud
- All cloud based services / components used are HITRUST certified and certified to meet the workload's requirements
- Workload is deployed through CI/CD pipeline and codes are scanned to check for security vulnerabilities
- All assets and data are protected from internal and external threats by implementing the security principles
- Workload architecture and network architecture are based on Zero Trust and Least Privilege principles
- Continuous Security Monitoring and Alerts response are implemented
- A non-production subscription must be endorsed prior to requesting the production endorsement

## SDRP/Snowflake security:

- End-to-end Encryption of Data at rest and in-flight using combination of a Snowflake-maintained key and a customer-managed key creates a composite master key to protect the Snowflake data. This is called Tri-Secret Secure
- The SDRP team has implemented snowflake network policies that identifies VNET IPs through which we connect to Snowflake
- Authentication methods are browser based SSO, SSH keys
- Azure Private Link provides private connectivity to Snowflake by ensuring that access to Snowflake is only through a private IP address. Traffic is only from the customer's virtual network (VNET) to the Snowflake VNET using the Microsoft backbone and avoids the public Internet
- Access to a tenant's space is granted through Secure. A sync process sends users and roles through several hoops: Secure--> AD on premise --> Azure AD --> Snowflake.
- SDRP leverages the HCP Data Catalog and the publications of Data Products to govern and audit access to Data in Snowflake

## Launchpad features:

- Launchpad is Optum's public cloud enablement platform for secure, compliant, and available workloads in Azure
- It is a configuration deployment and monitoring tools are deployed to all UnitedHealth Group public cloud accounts
- Launchpad enables centralized, continuous monitoring and logging for security compliance, application delivery, and business intelligence
- It assesses the infrastructure against security best practices and automates many elements of the application lifecycle, including platform logging, infrastructure compliance

## Our Responsibilities:

- Our security posture within Azure Defender boasts zero critical recommendations
- A robust security framework is implemented within the ISDC Infrastructure
- We leverage private endpoints to establish connections with important resources, e.g., Storage Accounts
- Access to vulnerable points is meticulously controlled, restricted solely to designated virtual networks and IPs

- Visibility and oversight are prioritized by proactively enabling comprehensive monitoring and logging across ISDC infrastructure
  - Anomalous activities are promptly identified and addressed
  - All sensitive credentials and secrets are securely stored in dedicated key vaults
  - To fortify our defense mechanisms, VNETs isolation and network security groups are employed to filter inbound and outbound traffic
  - Hub and spoke firewall is enabled on the VNETs which monitor the egress traffic
  - MFA authentication is mandated to connect to the public cloud and accesses are provided through SECURE
- =====

 [https://securityplatform.optum.com/appdetails/UHGWM110-017761/Cloud\\_Configurations](https://securityplatform.optum.com/appdetails/UHGWM110-017761/Cloud_Configurations)

Atia Ibrahim, Jordanna Williams and Madhan Thirukonda, Chad Brovold

HCP/HCC Platform: <https://docs.hcp.uhg.com/public-cloud/community>. Person to talk with: Brovold, Chad R

## We are HITRUST certified

SDRP Data Repository: [SDRP - Strategic Data Repository Platform - Fine-Grained Security Architecture - All Documents \(sharepoint.com\)](#)

- **Strategic Data Repository Platform (SDRP) Governance & Storage Tenancy:**
  - [https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/data\\_governance](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/data_governance)
  - [https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

Registering Data Product: [Registering a Data Product - Data Platform | HCP Docs \(uhg.com\)](#)

Subscription/Approval of Data Product: [Subscription Approval Process Workflow - Data Platform | HCP Docs \(uhg.com\)](#)

SDRP Contact Person: Rajesh G Nair

Cloud Security: <https://docs.hcp.uhg.com/public-cloud/cloud-security-intro>

Network Perimeter Security: <https://docs.hcp.uhg.com/public-cloud/network-perimeter-overview>

SDRP Roles: three persona roles: developer, analyst, support

## HCC:

- <https://docs.hcp.uhg.com/public-cloud/public-cloud-terms-and-conditions>
- <https://docs.hcp.uhg.com/public-cloud/cloud-security-intro>
- <https://docs.hcp.uhg.com/public-cloud/security-tools-checklist>

Security Audit head: Atia Ibrahim (atia\_ibrahim@optum.com)

Data Catalog Team: Kate is from the Data Catalog team - they have a link published on the Data Catalog on how to seek for support - [HCP Data Catalog \(uhg.com\)](#).. Kate's contact - [katlyn.koy@uhc.com](mailto:katlyn.koy@uhc.com)

Dynamic Data Masking & Tokenization: [https://uhgazure.sharepoint.com/teams/dwaas-datawarehousingaservice/\\_layouts/15/stream.aspx?id=%2Fteams%2Fdwaas%2Ddatawarehousingaservice%2FShared%20Documents%2FRecordings%2F20210408%5F110821%2DDynamic%2DData%2DMasking%2Dtokenization%2Emp4&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview](https://uhgazure.sharepoint.com/teams/dwaas-datawarehousingaservice/_layouts/15/stream.aspx?id=%2Fteams%2Fdwaas%2Ddatawarehousingaservice%2FShared%20Documents%2FRecordings%2F20210408%5F110821%2DDynamic%2DData%2DMasking%2Dtokenization%2Emp4&referrer=StreamWebApp%2EWeb&referrerScenario=AddressBarCopied%2Eview)

# Apply Masking Policy

Tuesday, July 9, 2024 1:06 PM

Thokala, Santhosh 5/30/2024 12:13 PM  
//Create Masking Policy

```
CREATE OR REPLACE MASKING POLICY Complete_mask AS (val string) returns string ->
CASE
WHEN current_role() IN ('AZU_SDRP_UBLIA_DEV_ADMINTEST_CN_RL') THEN VAL
ELSE '*****';
END;

--Policy_Table should be created in a central location (e.g., UTIL schema)
CREATE OR REPLACE TABLE Policy_Table (
    TableName STRING,
    ColumnName STRING,
    ContainsPIIData STRING
);

-- Populate the Policy_Data table with sample data
INSERT INTO Policy_Table (TableName, ColumnName, ContainsPIIData)
VALUES
('Customer', 'FirstName', 'PII'),
('Customer', 'LastName', 'PII'),
('Customer', 'Email', 'PHI'),
('Customer', 'PhoneNumber', 'PHI'),
('Customer', 'CreditCardNumber', 'PII');

INSERT INTO Policy_Table (TableName, ColumnName, ContainsPIIData)
VALUES
('Patients', 'CITY', 'PII');

delete from policy_table where tablename = 'Patients';

-- Create the Customer table
CREATE OR REPLACE TABLE Customer (
    CustomerID INT,
    FirstName STRING,
    LastName STRING,
    Email STRING,
    PhoneNumber STRING,
    CreditCardNumber STRING
);

-- Populate the Customer table with sample data
INSERT INTO Customer (CustomerID, FirstName, LastName, Email, PhoneNumber, CreditCardNumber)
VALUES
(1, 'John', 'Doe', 'john.doe@example.com', '555-1234', '1234-5678-9012-3456'),
(2, 'Jane', 'Smith', 'jane.smith@example.com', '555-5678', '9876-5432-1098-7654');

-- Create the procedure to apply masking policy
CREATE OR REPLACE PROCEDURE ApplyPIIMaskingPolicy()
RETURNS STRING
LANGUAGE JAVASCRIPT
EXECUTE AS CALLER
AS
$$
var sql_command = "";
var table_name = "";
var column_name = "";
var contains_pii_data = "";
var masking_policy = 'COMPLETE_MASK';

// Query to get table, column names, and ContainsPIIData value from Policy_Table
var result = snowflake.execute(
{
sqlText: `SELECT TableName, ColumnName, ContainsPIIData FROM Policy_Table` 
}
);

// Iterate over the result set
while (result.next()) {
```

```

table_name = result.getColumnValue(1);
column_name = result.getColumnValue(2);
contains_pii_data = result.getColumnValue(3);

// Check if the ContainsPIIData value is 'PHI' or 'PII'
if (contains_pii_data == 'PHI' || contains_pii_data == 'PII') {
// Construct the SQL command
sql_command = `ALTER TABLE ${table_name} MODIFY COLUMN ${column_name} SET MASKING POLICY ${masking_policy};`;

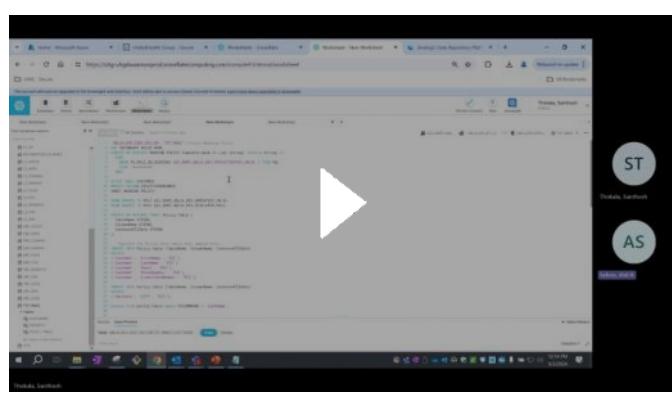
// Execute the SQL command
snowflake.execute(
{
sqlText: sql_command
}
);
}

return 'Masking policy applied to specified columns.';
$$;

```

CALL ApplyPIIMaskingPolicy();

KT - Discussion-20240603\_223259-Meeting Recording.mp4



UHD - Secure

**X HCP Console**

Home

**Products**

Account Manager

Your Sandbox

Healthcare Platform



**X HCP Console**

Home

**Products**

Account Manager

Your Sandbox

Healthcare Platform

| Application Integration            | Database                                    | Experience and Marketing Technologies          |
|------------------------------------|---------------------------------------------|------------------------------------------------|
| API Catalog                        | Microsoft SQL Database as a Service - DBaaS | Adobe Experience Manager (AEM)                 |
| API Management                     | Microsoft SQL Server Database               | Optum Pixel                                    |
| Events Platform                    | Virtual Server                              |                                                |
| GQL Platform                       | MongoDB Atlas                               |                                                |
|                                    |                                             |                                                |
| Artificial Intelligence            | Optum MySQL Database                        | Networking                                     |
| Conversational AI Platform         | Optum PostgreSQL                            | DNS (Domain Name System)                       |
|                                    |                                             | Load Balancing                                 |
| Compute                            | Data Management                             | Operations Management                          |
| Azure Stack                        | BDPaaS                                      | Chef                                           |
| Disposable Cloud Environment (DCE) | Change Data Capture (CDC)                   | Database and Middleware Application Management |
| Enterprise Nginx WebServer         | Elastic Cloud for Enterprise (ECE)          | Enterprise Performance Platform                |
| Enterprise Red Hat JBoss EAP       | Kafka Clusters On GCP                       | Observability                                  |
| Enterprise WildFly                 | Kafka Topics On Prem Alpha                  | Public Cloud Account Management                |
| HCC Kubernetes                     | Strategic Data Repository                   |                                                |

## Summarized MRIS Security

Sunday, April 14, 2024 8:50 PM

Hi Liv,

Security for ISDC (Insurance Solution Data Cloud) strictly adheres to the cloud security standards & protocols from EIS and leverages the standard enterprise cloud capabilities which come with required security features to enable those security standards.

The ISDC solution has been fully reviewed EIS for the deployment of EDP related capabilities into production and subsequent features and capabilities to be enabled via projects inflight will have follow-on EIS reviews as needed.

Health Care Cloud (HCC) also includes active ongoing scanning/monitoring and alerting of security vulnerabilities so that any new vulnerabilities can be addressed soon as identified. ISDC has enabled various network policies to strictly control access to the ISDC cloud environments and leverages the enterprise standard access provisioning capabilities to provide access to data - SECURE and Active Directory integration.

The cloud database platform (SDRP / Snowflake) also provides end-to-end encryption of data with combination of Optum controlled & owned and Snowflake owned Keys to ensure data security at rest and in-transit. SDRP (Strategic Data Repository Platform - Optum's wrapper on Snowflake for internal use) also is partnered with HCP (Health Care Platform) Data Catalog capability and associated publication of Data Products to enable governed and audited access to data by consumers.

There are multitude of security details in the attached word document as further reference.



Security\_Summary

# Candidates

Tuesday, January 30, 2024 5:06 PM

## Revised requirements:

We are going to pass on interviewing Jyoti. They do not have any experience with Databricks or Airflow based on their resume. It looks like they could pickup using Databricks and Airflow in 2-3 months based on their other experience, but in a short contact, that's not something we have time for.

I know that the job description that was created by OAS lists ADF and Snowflake along with Databricks and Airflow. For these Data Engineer roles, we need to heavily emphasize having experience with Databricks and Airflow over experience with ADF and Snowflake. Databricks and Airflow are the technologies they will work with on a daily basis.

| Candidate            | Interviewer | Feedback |
|----------------------|-------------|----------|
| Shailesh Tripathi    | Robert H.   |          |
| Subhajit Pramanik    | Robert H.   |          |
| Mallesh M Jolad      | Robert H.   |          |
| Lokanath Panda       | Robert H.   |          |
| Syamala Devi T       | Robert H.   |          |
| Aman Pursani         | Robert H.   |          |
| ASHOK KUMAR E        | Robert H.   |          |
| Jyoti Makarand Nikam | Robert H.   |          |
| Kevin Patel          | Robert H.   |          |
| Somesh Raju Dhurve   | Robert H.   |          |
| Niranjan V           | Dave C.     |          |
| Manikanta KR         | Dave C.     |          |
| Bhupesh Naik         | Dave C.     |          |

|   |                       |
|---|-----------------------|
| 6 | Performance Tuning    |
| 7 | Migration             |
| 8 | Data Analysis         |
| 9 | Data Analytics        |
| 0 | Reporting             |
| 1 | Data Viz              |
| 2 | DevOps                |
| 3 | Operations            |
| 4 | Requirement Gathering |
| 5 | Solutioning           |
| 6 | Designing             |
| 7 | Code Review           |
| 8 | Testing               |
| 9 | Web Development       |
| 0 |                       |
| 1 |                       |
| 2 |                       |
| 3 | <b>SOFT SKILLS</b>    |
| 4 | Communication         |
| 5 | Articulate            |
| 6 | Presence/Confidence   |
| 7 | Problem Solving       |
| 8 | Resourceful           |
| 9 | Self Reliant          |
| 0 | Critical Thinking     |
| 1 | Attitude              |
| 2 | Driven                |
| 3 | Ownership             |
| 4 | Positive              |
| 5 | Proactive             |
| 6 | Mentoring Experience  |
| 7 | Team Lead Experience  |

## Snowflake Admin - MRIS

**Requirements:** Please take note on reviewing offshore Cloud Platform Admin candidates. See requirements below: NOTE: we need someone who has experience with both Azure Admin and Snowflake Admin.

### Must Have Skills :Microsoft Azure IaaS, Microsoft Azure Infrastructure as Code (IaC), Snowflake Administration

#### Key Responsibilities:

- Collaborate with the development team and implement DevOps best practices
- Maintain and improve CI/CD pipelines for efficient software delivery
- Manage and support Azure based infrastructure and services
- Troubleshoot and resolve technical issues across development and production environments
- Create and Maintain infrastructure as code (IAC) using Terraform
- Define the administrative tasks performed in support of the Snowflake Data Cloud.
- Design and develop secure access to objects in Snowflake with Role-based Access Control (RBAC).
- Describe data governance in Snowflake, including column-level data security using secure views and dynamic data masking features.
- Provide technical support to development teams, ensuring smooth application deployment and operations.
- Collaborate on optimizing application performance and scalability
- Document processes, configurations and best practices
- Stay updated on industry trends and emerging technologies
- Azure certifications (e.g., AZ-900, AZ-104, HashiCorp Certified: Terraform Associate) is an added advantage.



Pudota  
anitha\_Sn...



Pudota  
anitha\_Sn...

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## Interview questions:

### Snowflake Architecture and Concepts:

- Explain the unique aspects of Snowflake's architecture (**storage and compute separation, elastic virtual warehouses**).
- Describe the different layers of Snowflake's architecture (**storage, compute, cloud services**).
- What are the **benefits of separating storage and compute** in Snowflake?

### Security and User Management:

- How does Snowflake ensure **data security**? (Encryption, access control)
- Explain the roles and privileges in Snowflake for user management.
- How would you **configure secure access to Snowflake for different user groups**?

### Administration and Management:

- Describe the **process of creating and managing virtual warehouses** in Snowflake.
- How do you **monitor and optimize virtual warehouse usage** for cost-effectiveness?
- Explain how to configure and manage user roles and privileges in Snowflake.
- What are some best practices for data backup and recovery in Snowflake?

### Troubleshooting and Performance Optimization:

- Describe your approach to troubleshooting **slow queries** in Snowflake.
- How would you identify and address **storage resource issues** in Snowflake?
- Explain how to monitor and optimize query performance in Snowflake.

### Additional Areas:

- How does Snowflake integrate with other data tools and ETL pipelines?
- What are some of the **advanced features of Snowflake for data sharing and collaboration**?
- Discuss your experience with any **specific Snowflake functionalities relevant to the role**.

### Tips for Success:

- Be prepared to discuss real-world scenarios where you've applied Snowflake administration skills.
- Showcase your understanding of data security best practices in the cloud environment.
- Demonstrate your ability to troubleshoot and solve problems related to Snowflake performance and resource utilization.
- Highlight your knowledge of automation tools and scripting languages that can enhance Snowflake administration tasks.

# Recordings

Wednesday, April 24, 2024 8:44 PM

[Implement Role Based and Fine Grain Access Controls on Snowflake-20240308\\_153812-Meeting Recording.mp4](#)

[20210408\\_110821-Dynamic-Data-Masking-tokenization.mp4](#)

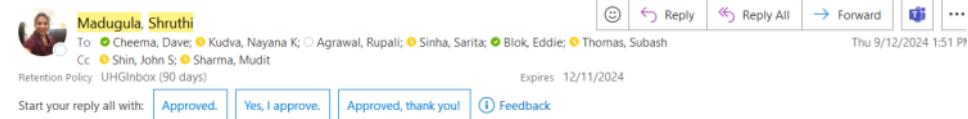
[SDRP based Data Products on Data Catalog\\_Questions • How should data products defined in terms of data-20240422\\_133311-Meeting Recording.mp4](#)  
[SDRP based Data Products on Data Catalog-20240417\\_130435-Meeting Recording.mp4](#)

[Detailed Overview of HCP Data Catalog-20230731\\_120223-Meeting Recording.mp4](#)

[Working session - RBAC using Storage Tenancy model-20240423\\_150948-Meeting Recording.mp4](#)

[Storage Tenant - Strategic Data Repository Platform \(SDRP\) | HCP Docs \(uhg.com\)](#)  
[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

RE: Request for review and approval for ADOBECLICKSTREAM-ISDC-SUBS (DS00000897)



++Subash – Can you/Eddie please review and approve Dave's request?

**From:** Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>  
**Sent:** Thursday, September 12, 2024 2:32 PM  
**To:** Kudva, Nayana K <[nayana.kudva@optum.com](mailto:nayana.kudva@optum.com)>; Agrawal, Rupali <[rupali\\_u\\_agrawal@optum.com](mailto:rupali_u_agrawal@optum.com)>; Sinha, Sarita <[sarita\\_sinha@optum.com](mailto:sarita_sinha@optum.com)>; Blok, Eddie <[eddie.blok@optum.com](mailto:eddie.blok@optum.com)>; Madugula, Shruthi <[shruthi.madugula@optum.com](mailto:shruthi.madugula@optum.com)>  
**Cc:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Sharma, Mudit <[mudit.sharma@optum.com](mailto:mudit.sharma@optum.com)>  
**Subject:** RE: Request for review and approval for ADOBECLICKSTREAM-ISDC-SUBS (DS00000897)

Nayana, et al,  
This is a reminder that the subscription: ADOBECLICKSTREAM-ISDC-SUBS (DS00000897) is still waiting for your approval. Could one of you please review and provide approval for it?  
Please don't hesitate to contact me, should you have any questions or concerns. Thank you.  
Regards,  
Dave Cheema

**From:** Cheema, Dave  
**Sent:** Tuesday, September 10, 2024 9:29 PM  
**To:** Kudva, Nayana K <[nayana.kudva@optum.com](mailto:nayana.kudva@optum.com)>; Agrawal, Rupali <[rupali\\_u\\_agrawal@optum.com](mailto:rupali_u_agrawal@optum.com)>; Sinha, Sarita <[sarita\\_sinha@optum.com](mailto:sarita_sinha@optum.com)>; Blok, Eddie <[eddie.blok@optum.com](mailto:eddie.blok@optum.com)>; Madugula, Shruthi <[shruthi.madugula@optum.com](mailto:shruthi.madugula@optum.com)>  
**Subject:** Request for review and approval for ADOBECLICKSTREAM-ISDC-SUBS (DS00000897)

All,  
You have identified as the Business Owners for subscription: ADOBECLICKSTREAM-ISDC-SUBS (DS00000897) and it requires your review and approval for this subscription to be able to use it. I know you guys are busy, but it will help a lot with our timeline if you provide the approval in a timely manner. Please feel free to reach out to me if you have any question/concern. Thanks in advance.

Regards,  
Dave Cheema

# Access Control

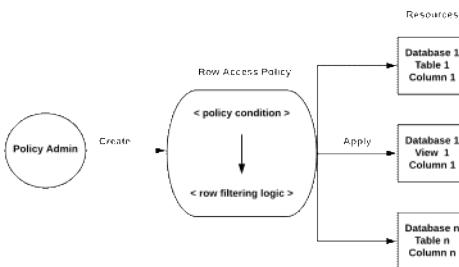
Tuesday, March 12, 2024 4:50 PM

If the policy contains a mapping table lookup, create a centralized mapping table and store the mapping table in the same database as the protected table.

A **row access policy** is a schema-level object that determines whether a given row in a table or view can be viewed from the Select, Update, Delete and Merge statements.

Row access policies can include conditions and functions in the policy expression to transform the data at query runtime when those conditions are met.

It includes the object owner who normally has full access to the underlying data. A single policy can be set on different tables and views at the same time.



Row access policies do not currently prevent rows from being inserted, or prevent visible rows from being updated or deleted.

The row access policy that is applicable to the table is always executed first.

It contains an expression that can specify Snowflake database objects, and use [Conditional Expression Functions](#) and [Context Functions](#).

Snowflake evaluates the policy expression by using the role of the [policy owner](#) make a decision.

Snowflake supports adding a row access policy to a materialized view.

## How it works:

1. If a policy is added to the database object, all rows are protected by the policy.
2. Snowflake creates a dynamic secure view of the database object and the policy expression is evaluated against it.
3. Snowflake generates the query output for the user, and the output only contains rows based on the policy definition evaluation.

## Tips to secure data and enhance performance:

- Limit the policy arguments
- Simplify the SQL expression
- Replace the mapping table reference with a memoizable function
- Test with realistic workloads
- Cluster by attributes (very large tables)
- Use Search optimization service, if possible
- Apply a row access policy to a table or view

## Limitations

- Using the [CHANGES clause](#) on a view protected by a row access policy is not supported.
- Snowflake does not support using external tables as a mapping table in a row access policy.
- Snowflake does not support attaching a row access policy to the stream object itself.
- Future grants of privileges on row access policies are not supported.

# Column-level Security

Column-level Security in Snowflake allows the application of a masking policy to a column within a table or view, including following features:

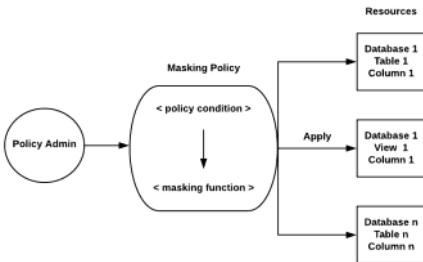
1. [Dynamic Data Masking](#) - uses masking policies to selectively mask plain-text data in table and view columns at query time
2. [External Tokenization](#) - enables accounts to tokenize data before loading it into Snowflake and detokenize the data at query runtime

Snowflake supports masking policies as a schema-level object

When users execute a query with a masking policy applied, the masking policy conditions determine whether users can see masked, partially masked, obfuscated, or tokenized data.

Masking policies can include conditions and functions to transform the data at query runtime.

The policy-driven approach provides segregation of duties to allow security teams to define policies.



Masking policy administrators can implement a masking policy, e.g., analysts can only view the last four digits of a phone number and none of the social security number, customer support representatives can view the entire phone number and social security number for verification.

## Benefits:

- Masking policy can be used for dynamic data masking
- It can be used on multiple tables and views, if column type matches with the column type in the policy
- Specify conditional masking policy such as, users with the ADMIN role can view the email address
- Masking policies prevent an explosion of views and dashboards to manage.
- Masking policies support segregation of duties (SoD) through the role separation of policy administrators from object owners

A masking policy consists of a single [data type](#), one or more conditions, and one or more masking functions.

- You can apply the masking policy to one or more table/view columns with the matching data type.
  - Masking policy conditions can be expressed using [Conditional Expression Functions](#) and [Context Functions](#) or by querying a custom entitlement table.
  - Masking functions can be any of the built-in functions (e.g. [REGEXP\\_REPLACE](#), [SHA2](#), [SHA2\\_HEX](#)), [User-Defined Functions Overview](#), or [Writing External Functions](#)
- 
- 

Please find the links pointing to SDRP.

1. **SDRP Yammer Page:** ([20+ Viva Engage - SDRP - Strategic Data Repository Platform \(yammer.com\)](#))

2. **SDRP Teams Channel Link:** [HCP Data Platform User Group | Strategic Data Repository Platform | Microsoft Teams](#)

3. **Documentation:** [Product Overview - Strategic Data Repository Platform \(SDRP\) | HCP Docs \(uhg.com\)](#)

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## Network Diagram



Role bases access control (RBAC) Info:

<https://app.snowflake.com/uhg/uhgdwaas/worksheets>



Access\_Review  
ew\_Detail...



RLS\_RESTRI  
CT\_V3



RLS\_V3\_DE  
MO



Implement  
Role Base...

[https://uhgazure-my.sharepoint.com/personal/dave\\_cheema\\_optum\\_com/Documents/Notebooks/My%20Notebook/OAS%20-%20Linked%20Files/SMART%20Codebase%20Walkthrough-20240327-140708-Meeting%20Recording.mp4](https://uhgazure-my.sharepoint.com/personal/dave_cheema_optum_com/Documents/Notebooks/My%20Notebook/OAS%20-%20Linked%20Files/SMART%20Codebase%20Walkthrough-20240327-140708-Meeting%20Recording.mp4)

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[Registering a Data Product - Data Platform | HCP Docs \(uhg.com\)](#)

[Subscription Approval Process Workflow - Data Platform | HCP Docs \(uhg.com\)](#)

[SDRP - Strategic Data Repository Platform - Fine-Grained Security Architecture - All Documents \(sharepoint.com\)](#)

# Design Security model

Tuesday, April 2, 2024 7:29 PM

## Resources:

Database, schema, table, and attribute

## Actions:

create/write, Read, update, delete

## Who can do it

People and processes

What type of people

Personas - developers, owners, users ( admin, analysts, accountants, etc.)

These people/processes have certain privileges

The privileges are grouped into roles

These roles are assigned to personas

A person/entity could have multiple roles, which end up being the sum of all permissions for a person/entity

Security models work best when they are coarse grained. Also, adaptive security models, but we won't discuss them here

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Here are some key best practices to consider when designing a security model for a system:

## Before Design:

- **Identify Stakeholders and Threats:** who has a stake in the system's security (developers, users, owners) and threat types(unauthorized access, data breaches, denial-of-service attacks).

## Design Principles:

- **Defense in Depth:** Don't rely on a single security measure. Implement multiple layers of security
- **Secure by Default:** Systems should be configured with security in mind from the start
- **Least Privilege:** Users and processes should only have the minimum access permissions required to perform their tasks
- **Network Segmentation:** Divide the system into separate network segments to restrict unauthorized access to critical resources

## Core Security Measures:

- **Access Control:** Implement a robust access control framework: role-based access control (RBAC) based on roles and responsibilities
- **Authentication:** Use strong authentication methods like multi-factor authentication (MFA) to verify user identities
- **Encryption:** Encrypt sensitive data at rest and in transit
- **Firewalls, intrusion detection, and physical security**

## Additional Considerations:

- **Logging and Monitoring:** Implement logging and monitoring systems to track user activity and identify suspicious behavior

## Incident Response:

Have a plan in place for how to respond to security incidents

• **Provide security awareness training:** Educate stakeholders about security best practices, such as, strong password, phishing awareness, and social engineering prevention

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Designing a strong security model involves following steps:

## 1. Understand System Needs and Assets:

- **System Functionality:** Identify the core functions of the system and the data it handles
- **Assets:** Recognize the valuable data or resources

## 2. Define Security Threats and Goals:

- **Threats:** potential vulnerabilities and attack vectors your system might face
- **Security Goals:** Establish your desired security outcomes

## 3. Implement Security Controls:

- **Authentication and Authorization (AuthN/AuthZ):** Enforce strong mechanisms to verify user identities such as, strong password, multi-factor authentication, etc.
- **Network Security:** Implement network controls like firewalls and intrusion detection systems to monitor and filter network traffic

+++++

## Designing role-based access control (RBAC):

### 1. Identify Resources and Permissions:

- List all resources within MRIS on the Snowflake/Azure platform, such as, data files, applications, servers, etc.
- Define specific permissions (actions) users can perform on these resources e.g., read, write, edit, delete, and execute

### 2. Define User Roles:

- Analyze the tasks and responsibilities
- Group users with similar job functions and responsibilities into roles
- Ensure roles are unique, but they can be hierarchical

### 3. Access Control Policies:

Define policies that determine which roles can access specific resources

### 4. Define Permissions:

Determine the specific permissions or actions that each role should be able to perform, e.g., read, write, delete, or execute

### 5. Assign Roles to Users:

Assign roles based on responsibilities and access needs

### 6. Assign Permissions to Roles:

- Match required permissions for each role with the resources they need to access

- The principle of least privilege should be followed

### 7. Implement RBAC:

- Leverage native RBAC features, such as Secure roles, custom code, or security software
- Assign users to appropriate roles within the RBAC system.

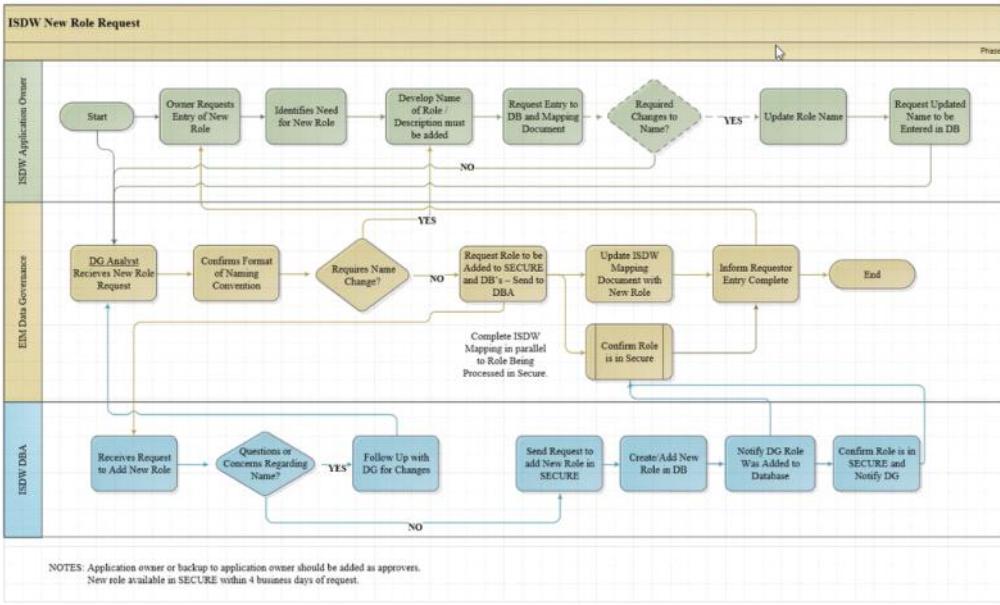
### 8. Use the RBAC model with a hierarchy:

Roles can be organized in a hierarchy, such as higher-level roles inherit permissions from lower-level roles.

### 9. Separation of Duties:

Consider separating critical tasks across different roles to minimize risk

+++++



#### SRDP - Data Governance and Storage Tenancy:

[https://docs.hcp.ung.com/strategic-data-repository-platform-\(sdrp\)/data\\_governance](https://docs.hcp.ung.com/strategic-data-repository-platform-(sdrp)/data_governance)

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)/storage-tenant](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp)/storage-tenant)

SDRP Platform: [Healthcare Platform \(uhg.com\)](#)

SDRP Data Product: <https://docs.hcp.uhg.com/data-platform/data-product-overview>

# Data Catalog, Products & Consumer access

Wednesday, April 17, 2024 1:05 PM

## Storage Tenancy Contact:

Abel, Angela L

### SDRP Roles:

- AZU\_SDRP\_\*\*\*\_DEV\_ANALYST\_ROLE
- AZU\_SDRP\_\*\*\*\_DEV\_DEVELOPER\_ROLE
- AZU\_SDRP\_\*\*\*\_DEV\_SUPPORT\_ROLE

### SDRP Instructions



Hi Team!

#### Self-Service Instruction:

You can still start using storage tenants, but not in the context of a full-scale migration unless you feel comfortable doing it yourself. In general, you should approach this as a new data project instead of a "port" of your existing v2 tenant.

1. You should still review your current v2 tenants and identify where it makes sense to divide their data if possible.
2. For each data division:
  1. Determine what HCP package makes most sense to use.
  2. Determine who this data division should be administered by (ie: who will be the tenant admins)
3. Based on (2), determine if you need different PRM resource groups to split up tenant administration
4. Provision a storage tenant for each data division:
  1. Determine what environments are applicable. Storage does not have a sandbox environment, so tenants should consider using dev instead.
  5. Based on (2) and (4), create your snowflake objects via HCP console for each storage tenant to sketch out how your landscape will look like
  6. If things make sense, load data from your v2 tenants into your storage tenants starting with your lowest environments.

An automated migration, once it's available, will not be a 1-1 move from v2 to storage for everyone, the two are different enough that tenants should not expect a lift-and-shift unless their v2 setup really is very simple and/or already aligns with storage tenant goals. If you are still not comfortable with this, then you should hold off.

Info needed for provisioning of Storage Tenant:

- AHAID: [ONBOARDDCDO-I-755](#)
- ASKID:
- Resource Group (how to create a RG can be [found here](#)):
- Tenant name (3-15 characters - letters, and underscores only):
- SF Account: UHGDWAAS
- Environment (DEV,STG,TST,PRD,SIT):
- [Healthcare Package](#) (if unsure, you can select **undefined**):
- Business Steward MSID:
- Technical Steward MSID:
- Technical Owner MSID:

Let me know if you need anything else or have any questions!

**Angela Abel** (she/her)

SDRP . TDaaS  
CDO | Optum Tech

- AHAID: [ONBOARDDCDO-I-755](#)
- ASKID: [UHGWM110-017761](#)
- Resource Group (how to create a RG can be [found here](#)): [rg-isdc-dev](#)
- Tenant name (3-15 characters - letters, and underscores only): [ISDC](#)
- SF Account: UHGDWAAS
- Environment (DEV,STG,TST,PRD,SIT): [DEV](#)
- [Healthcare Package](#) (if unsure, you can select **undefined**): [undefined](#)
- Business Steward MSID: [douglas\\_j\\_uebele@uhc.com](#) (As ISDC is unified data platform, there will be multiple business stewards for each application. For now I have put as Doug)
- Technical Steward MSID: [douglas\\_j\\_uebele@uhc.com](#)
- Technical Owner MSID: [ed\\_majorossy@uhc.com](#)

[10:11 AM] Bangale, Gaurav

Examples of the Prefix for Tenants already provisioned.

| PIA Storage Tenant        |                                                                       |
|---------------------------|-----------------------------------------------------------------------|
| <input type="checkbox"/>  | ROLE (FNMI) Container role AZU_SDRP_FNMI_DEV_ROLE_CN_RL               |
| <input type="checkbox"/>  | Tenant Analyst (FNMI) Functional role for tenant data analysts        |
| <input type="checkbox"/>  | Tenant Developer (FNMI) Functional role for tenant developers         |
| <input type="checkbox"/>  | Tenant Support (FNMI) Functional role for tenant support personnel    |
| SDRP DEMO3 Storage Tenant |                                                                       |
| <input type="checkbox"/>  | RESTRICTED (VUITR) Container role AZU_SDRP_VUITR_DEV_RESTRICTED_CN_RL |
| <input type="checkbox"/>  | Tenant Analyst (VUITR) Functional role for tenant data analysts       |
| <input type="checkbox"/>  | Tenant Developer (VUITR) Functional role for tenant developers        |
| <input type="checkbox"/>  | Tenant Support (VUITR) Functional role for tenant support personnel   |

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Announcement Visit HCP Docs for user guides and documentation. For additional support, reach out to Data Catalog Support.

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New Products Most Subscribed

**PRM Data Product Production**  
PRM is the only thing that allows us to programmatically define, establish traceability and implement controls spanning the assets of an entire application...  
Cloud Informational Internal Data Internal Standard Data +5

**Qualtrics Digital and Call Survey Data**  
Consumer BPI PHI Communications +30  
Behavioral Health EMP IMD +10

**ARUUNetNonProd**  
This data log is all about ARU UNET kafka topics - Connected claims - facility claim type  
Undefined Undefined Employer&Individual

Glossary Quick Actions

26,813 Glossary Terms Terms that define the key characteristics of the datasets & data products within the catalog  
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Type Platform Container Environment Package Glossary Term + More Filters Advanced Filters

Navigate Showing 1 - 10 of 10,000+ results Sort Bulk edit Download

**Data Product 106**

- Datasets 2.3M**
  - Databricks 46.3k
  - erwin.logical 9.2k
  - HDFS 12.3k
  - Hive 1.6k
  - Kafka 16k
  - PostgreSQL 9
  - Snowflake 618.4k
  - SQL Server 7.5k
  - Synapse 6.2k
  - td. Teradata 8.8k
- Glossary Terms 26.8k**

**CCAM - OHBS Response Topics**  
DPO00000397  
Response Topics will be consume by OHBS Team  
+ Undefined + Undefined UnitedHealthcareCorporate + UHCommunity&State + 3

**Health Service Case**  
DPO0000002  
Health Service Cases result in Claims. The FHIR Claims Response resource is the industry standard used for exchanging data on Health Service c...  
+ Clinical + Health Service Case + PHI + PII + 5 + UIAS Compatible

**Condition**  
DPO0000004  
This data product exposes the primary tables associated with Condition in the ECDH Foundation schema in the Production environment.  
+ Clinical + Condition + PHI + PII + 10 + ECDH PRD FOUNDATION + UIAS Compatible

Owners

Malik, Mohammad A Bansal, Varun + 1 more

Nayak, Nagaraja Shivaswamy Vimla, Madhu + 2 more

Nguyen, Khiет H Nayak, Nagaraja + 3 more

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Type (T) Platform (T) Save as a View Advanced Filters

Datasets MAS\_DEV\_OAS\_DB Snowflake clear all

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**Data Product 0**

**Datasets 3.2k**

- Snowflake 3.2k
- uhg\_dwaas 2.9k
- ISDC\_DEV\_DW\_DB 2.2k
- ISDC\_DEV\_WORK\_DB\_... 216
- ISDC\_PRD\_DW\_DB 205
- ISDC\_DEV\_TST\_DW\_DB 156
- ECT\_PRD\_STARS\_ANAL... 59
- ECT\_DEV\_STARS\_100... 27

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|-----------------------|-----|
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| ISDC_PRD_DW_DB        | 205 |
| ISDC_DEV_TST_DW_DB    | 156 |
| ECT_PRD_STARS_ANAL... | 59  |
| ECT_DEV_STARS_PDO...  | 27  |
| ECT_PRD_STARS_DOO...  | 19  |
| ECT_STG_STARS_DOO...  | 7   |
| ECT_PRD_CDD_ANALY...  | 3   |
| ECT_PRD_CQD_DB        | 1   |
| ECT_DEV_CDD_DB        | 1   |
| uhg_dwaas             | 247 |

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- UHGWM110-016740
- UHGWM110-016049
- UHGWM110-024302
- UHGWM110-025452
- UHGWM110-003685
- UHGWM110-027701
- UHGWM110-014055
- UHGWM110-021439
- UHGWM110-020999

Glossary Terms: 0



https://data.hcp.uhg.com/data-forge/productRegistration/new

Important information

- For detailed instructions on how to register a Data Product please use this [Registration Guide](#).
- Fields marked with a lock icon will not be editable once approvals have been received and the Data Product is published in the catalog.
- As a Data Product Owner, the role includes considering the ways that UHG collects and monitors data use and data access restrictions that can affect the ways that data products are constructed. Consider whether the product contains any customer level identifier data customer segment, site, customer account group, or other identifier, etc. listed in [Data Governance Tracking System](#) or the [Optum Global Governance Review Process](#).

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Product Name [More info](#)

Brief product description [More info](#)

Max 400 characters

Product Documentation [More info](#)

[Overview](#)

[Business Value Proposition / Justification](#)

[Current Business Use cases](#)

[Architecture](#)

[Source System of Record](#)

[Access Guide](#)

[Data Freshness](#)

[Support Process / Feedback](#)

[Feedback](#) [Support](#)

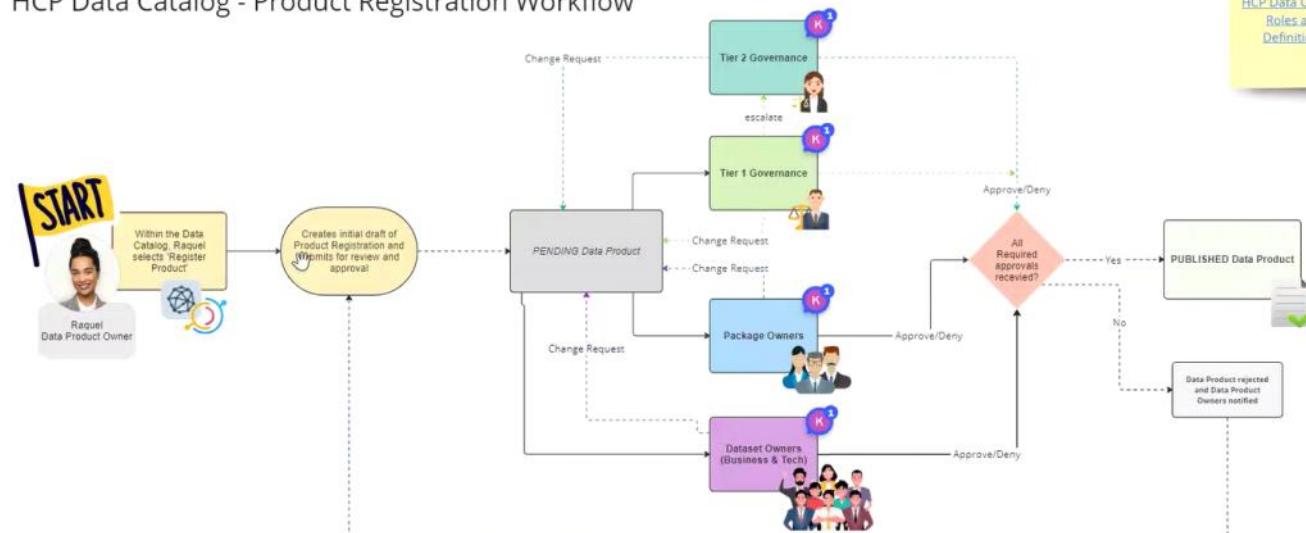
https://miro.com/app/board/uXjVPhrSgW0=/

HCP Data Catalog Governance PUBLIC

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View only

## HCP Data Catalog - Product Registration Workflow



Tier 1 - review DUR request  
Tier2 - legal group

Register your data product

**Description**    **2 Data & Use**    **3 Ownership & Alignment**    **4 Data Classification**    **5 Review & Submit**

**Important information**

- For detailed instructions on how to register a Data Product please use this [Registration Guide](#).
- Fields marked with a lock icon will not be editable once approvals have been received and the Data Product is published in the catalog.
- As a Data Product Owner, the role includes considering the ways that UHG collects and monitors data use and data access restrictions that can affect the ways that data products are constructed. Consider whether the product contains any customer level identifier (data customer segment, site, customer account group, or other identifier, etc.) listed in [Data Governance Tracking System](#) or the [Optum Global Governance Review Process](#).

Product visibility in data catalog [More info](#)

Public

Product Name [More info](#)

Brief product description [More info](#)

Max 400 characters

Product Documentation [More info](#)

Overview

**Feedback**    **Support**

https://data.hcp.uhg.com/dataProduct/urn:cid:product:c54dac4c-7cfb-4219-8788-be94b53d6102

Healthcare Platform

Discover    Products    APIs & Data    Community    Learning

Data Catalog

Search Datasets, Data Products, and more

Browse    Data Assets    Actions    My Data    Analytics    Admin

**DATA PRODUCT**

## Engineering Insights

DF00000124

This product provides GitHub Enterprise and GitHub Cloud usage data across UHG. It presents the GitHub usage data in different formats that can be used to make data-driven decisions by businesses.

**Documentation**    **Datasets**    **Subscriptions**

### Overview

Engineering Insights Data Product contains GitHub Enterprise (GHE), GitHub Cloud (GHEC) and Engineering Insights data for all of UHG that is stored in Snowflake platform. It includes the GitHub (GHE & GHEC) usage data in different formats that can be used to make data-driven decisions by businesses.

*This data is available for consumption to consumers all through UHG Organizations through Snowflake subscription.*

### Business Value Proposition / Justification

### Current Business Use cases

The below Use cases can be drilled down by Organizations under Optum Technology LOB and by Leadership Levels:

Engineering Density - Number of Engineering Job Families and Software Engineers  
GitHub (GHEC & GHE) User Adoption - GitHub Account Holders, Active Committers, Total Engineering Users and Software Engineers Users.  
GitHub Enterprise Cloud Adoption, GitHub Stats by Organization  
Vitals Files Valid/Invalid/No  
IDs with Repos Valid/Invalid/No  
Active Repos Active/Stale.

### Architecture

**Status**  
 Published

**Package**  
 Cloud

**Subpackage**  
 Insights

**Platform**  
Snowflake

**Owners**

- Business Owner: Scott A. Merritt Sr.
- Technical Owner: Sharma, Ayushi
- Seichter, Daniel R

**Technical Stewards**

- Seichter, Daniel R
- Sharma, Ayushi

**Tags**

- Engineering Insights
- Engineering

**Feedback**    **Support**

https://data.hcp.uhg.com/data-forge/approvals/urn:cid:Subscription:c98daef831-90a9-4e2c-b722-4419a45bdd5/urn:cid:taskGroup:a46ccca-bfe8-43b6-b465-6e6769a3312c

2024 Roadmap - D...    Kate's Personal Task...    DEV - Data Platform    Stage - Data Platform    HCP Data Platform...    HCP Docs    Rally    General UHC Links    General Optum Links    ELP    Manager    Catalog Demo Exa...    Home | Alation

Your approver group is: Data Admin, Business Owners, Tier 1 Governance  
Your approver group status is: Approved

Approval Progress    Subscription Summary    Product Summary    Information Requests    History    Related Subscriptions    Access Group

Your approver group is: Data Admin, Business Owners, Tier 1 Governance  
Your approver group status is: Approved

| User Name                      | MS ID    | Access group status | Status date | Country | Department                   | Role   |
|--------------------------------|----------|---------------------|-------------|---------|------------------------------|--------|
| V Villalon, Andres             | avill152 | Inactive            | 06/10/2023  | USA     | Optum Insight Tech Eng       | Admin  |
| N Nowak, Bobbie-Jean           | bnowak2  | Approved            | 04/17/2023  | USA     | Ent Tech Infra Pltfrms Svcs  | Admin  |
| N Nowak, Bobbie-Jean           | bnowak2  | Inactive            | 11/11/2023  | USA     | Ent Tech Infra Pltfirms Svcs | Viewer |
| N Nair, Rajesh G               | rmail104 | Inactive            | 06/12/2023  | USA     | Ent Tech Infra Pltfirms Svcs | Viewer |
| Koy, Kate                      | kkoy     | Approved            | 06/10/2023  | USA     | Ent Tech Infra Pltfirms Svcs | Admin  |
| Koy, Kate                      | kkoy     | Approved            | 10/09/2023  | USA     | Ent Tech Infra Pltfirms Svcs | Viewer |
| Tekal, Varadaraj N             | vtekal   | Inactive            | 11/11/2023  | USA     | Ent Tech Infra Pltfirms Svcs | Viewer |
| K Kamalasesha Radha, Meenakshi | mkamalas | Approved            | 07/27/2023  | India   | OG Adv APAC-1                | Admin  |
| K Kamalasesha Radha, Meenakshi | mkamalas | Inactive            | 11/11/2023  | India   | OG Adv APAC-1                | Viewer |
| K Kadambi, Jay                 | jkadambi | Approved            | 07/27/2023  | USA     | Ent Tech Infra Pltfirms Svcs | Admin  |

Development lifecycle: Ongoing  
Data access lifetime: 04/15/2024 - 12/31/2024  
Timeline Explanation: [Edit](#)  
Related DUR: [Edit](#)

Business serving: OptumTechnology  
Business sponsor: Koy, Kate  
Business reason: System/Software (IT Operations & Maintenance)  
[Edit](#)

Data activity: Operations and maintenance  
Who will access: Internal  
Intended use of data: This access will be used to demo end-to-end platform functionality. I am the owner of this data.  
How the data will be consumed: Query in place  
Target application compliant: [Edit](#)

Data be linked or aggregated: NO  
Explanation of activities planned: [Edit](#)  
Data be modified: NO  
Explanation of data modified: [Edit](#)  
Offshore resources have access to data: NO  
Global legal review record: [Edit](#)

Attachments: [Edit](#)

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### My Data

- Data Products
- Datasets
- Subscriptions
- Access Groups

These are product subscriptions that:

- Have been submitted on behalf of an Application Resource Group for which you are an admin or contributor
- Have been submitted on behalf of a Data Access Group for which you are an admin and/or viewer

Resource group: [Edit](#)

https://data.hcp.uhg.com/data-forge/datasets

2024 Roadmap - D... Kate's Personal Task... DEV - Data Platform Stage - Data Platform HCP Data Platform... HCP Docs Rally General UHC Links General Optum Links ELP Manager Catalog Demo Exa... Home | Alation > Other favor

## My Data

Data Products Datasets Subscriptions Access Groups

These are product subscriptions that:

- Have been submitted on behalf of an Application Resource Group for which you are an admin or contributor
- Have been submitted on behalf of a Data Access Group for which you are an admin and/or viewer

**Resource group**

All

**Filter by keyword**

| Subscription Name                   | Product Name                    | Status    | Access details | Information requests | Application ID         | Resource Group         | Start Date | End Date   | Action                           |
|-------------------------------------|---------------------------------|-----------|----------------|----------------------|------------------------|------------------------|------------|------------|----------------------------------|
| MetaAI DS00000427                   | HCP Data Catalog DP00000146     | Pending   | -              | -                    | Metadata Artificial... | metaairg               | 04/17/2024 | 12/30/2024 | <input type="button" value="⋮"/> |
| Test prod rollout - A... DS00000426 | Demo Snowflake Pr... DP00000087 | Declined  | -              | -                    | HCP Data Catalog       | hcp-data-platform...   | 04/16/2024 | 05/16/2024 | <input type="button" value="⋮"/> |
| Demo Subscription... DS00000424     | HCP Data Catalog DP00000146     | Active    | Provisioned    | -                    | HCP Data Catalog       | hcp-data-catalog-pr... | 04/15/2024 | 12/31/2024 | <input type="button" value="⋮"/> |
| Production Deploy... DS00000412     | Demo Snowflake Pr... DP00000087 | Revoked   | -              | -                    | UHGWM110-027...        | data-experience-cat... | 04/03/2024 | 05/02/2024 | <input type="button" value="⋮"/> |
| snowflake-dra-AN-I... DS00000410    | HCP Data Catalog DP00000104     | Pending   | -              | -                    | AIDE_0074972           | data-classification    | 04/02/2024 | 04/01/2025 | <input type="button" value="⋮"/> |
| Production Deploy... DS00000408     | Demo Snowflake Pr... DP00000087 | Active    | -              | -                    | Data Experience ...    | data-experience-cat... | 03/21/2024 | 04/19/2024 | <input type="button" value="⋮"/> |
| Production Deploy... DS00000405     | Demo Snowflake Pr... DP00000087 | Revoked   | -              | -                    | Data Experience ...    | data-experience-cat... | 03/21/2024 | 04/19/2024 | <input type="button" value="⋮"/> |
| Production Deploy... DS00000404     | Demo Snowflake Pr... DP00000087 | Cancelled | -              | -                    | UHGWM110-027...        | data-experience-cat... | 04/20/2024 | 04/23/2024 | <input type="button" value="⋮"/> |
| Test vulnerabilities... DS00000394  | Demo Snowflake Pr... DP00000087 | Active    | -              | -                    | HCP Data Catalog       | hcp-data-platform...   | 03/18/2024 | 12/31/2024 | <input type="button" value="⋮"/> |
| Test prod service a... DS00000397   | Demo Snowflake Pr... DP00000087 | Declined  | -              | -                    | HCP Data Catalog       | hcp-data-platform...   | 03/12/2024 | 12/31/2024 | <input type="button" value="⋮"/> |

https://data.hcp.uhg.com/data-forge/approvals/urn:cidf:Subscription:98daf831-90a9-4e2c-b722-4419a45bdd5/urn:taskGroup:4c46ccca-bfe8-43b6-b465-6e6769a33f2c

2024 Roadmap - D... Kate's Personal Task... DEV - Data Platform Stage - Data Platform HCP Data Platform... HCP Docs Rally General UHC Links General Optum Links ELP Manager Catalog Demo I

## Data Catalog

Search Datasets, Data Products, and more

### Subscription Approval

|                       |                 |            |         |                                       |
|-----------------------|-----------------|------------|---------|---------------------------------------|
| Subscription          | Subscription ID | Submitted  | Pending | Subscription Status                   |
| Demo Subscription0415 | DS00000424      | 04/15/2024 | 0 days  | <input type="button" value="Active"/> |

Your approver group is: Data Admin, Business Owners, Tier 1 Governance  
Your approver group status is: Approved

Approval Progress Subscription Summary Product Summary **Information Requests** History Related Subscriptions Access Group

**Requests Filters**

All Requests  My Requests  Pending Requests

https://data.hcp.uhg.com/data-forge/approvals/urn:cidf:Subscription:98daf831-90a9-4e2c-b722-4419a45bdd5/urn:taskGroup:4c46ccca-bfe8-43b6-b465-6e6769a33f2c

2024 Roadmap - D... Kate's Personal Task... DEV - Data Platform Stage - Data Platform HCP Data Platform... HCP Docs Rally General UHC Links General Optum Links ELP Manager Catalog Demo I

**Healthcare Platform** Discover Products APIs & Data Community Learning

### Data Catalog

Search Datasets, Data Products, and more

Brows

### Subscription Approval

|                       |                 |            |         |                                       |
|-----------------------|-----------------|------------|---------|---------------------------------------|
| Subscription          | Subscription ID | Submitted  | Pending | Subscription Status                   |
| Demo Subscription0415 | DS00000424      | 04/15/2024 | 0 days  | <input type="button" value="Active"/> |

Your approver group is: Data Admin, Business Owners, Tier 1 Governance  
Your approver group status is: Approved

Approval Progress Subscription Summary Product Summary Information Requests History Related Subscriptions Access Group

| Approval Progress                                      |  |                                           |                          |               |  |
|--------------------------------------------------------|--|-------------------------------------------|--------------------------|---------------|--|
| Approver Group                                         |  | Approval Status                           | Approvals Received/Total | Approval Date |  |
| <input checked="" type="checkbox"/> Business Owners    |  | <input checked="" type="radio"/> Approved | 1 of 1                   | 04/15/24      |  |
| <input checked="" type="checkbox"/> Technical Owners   |  | <input checked="" type="radio"/> Approved | 1 of 1                   | 04/15/24      |  |
| <input checked="" type="checkbox"/> Technical Stewards |  | <input checked="" type="radio"/> Approved | 1 of 1                   | 04/15/24      |  |
| <input checked="" type="checkbox"/> Tier 1 Governance  |  | <input checked="" type="radio"/> Approved | 1 of 1                   | 04/15/24      |  |

https://data.hcp.uhg.com/data-forge/datasets

Resource group

All

Data access

Subscription Name: Demo Subscription0415

Resource Group: hcp-data-catalog-product

Data Product: HCP Data Catalog Metadata

Platform instance general details

This Subscription grants access to a Data Product hosted within the UHG DWaaS Snowflake Platform. To start using this Subscription:

- Click the login link to navigate to the Snowflake UI in your browser
- Click the "Sign in using AzureAD" button if prompted. This will sign you in via Optum SSO. Do NOT login with manual username/password
- In the top-right corner, click your name and select the Role named after your HCP Resource Group (see Credentials section below)
- You are now able to start executing queries against any UHG DWaaS Snowflake data products your HCP Resource Group is subscribed to!
- For full documentation and advanced connection options, please visit the Product Site

Credentials

Provisioned User Account:

- katlyn.koy@uhc.com

sdrp-role : HCP\_DATA\_CATALOG\_PRODUCT\_55D8310\_CMPT\_ROLE

Connection information

UHG DWaaS Login

- Account Identifier: uhg-uhgdwaas
- Browser Login: https://uhg-uhgdwaas.snowflakecomputing.com/console
- Connector Path: uhg\_uhgdaas.east-us-2.azure

Start Date End Date Action

|            |            |  |
|------------|------------|--|
| 04/17/2024 | 12/30/2024 |  |
| 04/16/2024 | 05/16/2024 |  |
| 04/15/2024 | 12/31/2024 |  |
| 04/03/2024 | 05/02/2024 |  |
| 04/02/2024 | 04/01/2025 |  |
| 03/21/2024 | 04/19/2024 |  |
| 04/20/2024 | 04/23/2024 |  |
| 03/18/2024 | 12/31/2024 |  |
| 03/12/2024 | 12/31/2024 |  |

Cancel

https://data.hcp.uhg.com/data-forge/data0/dataRights/new/

Data activity: More info ▾

Data Analytics

Who will have access to this data?

Internal

Describe intended use of the data: More info ▾

test

How will the data be consumed?

Query in place

Will the data be linked/aggregated with other data?

Yes

No

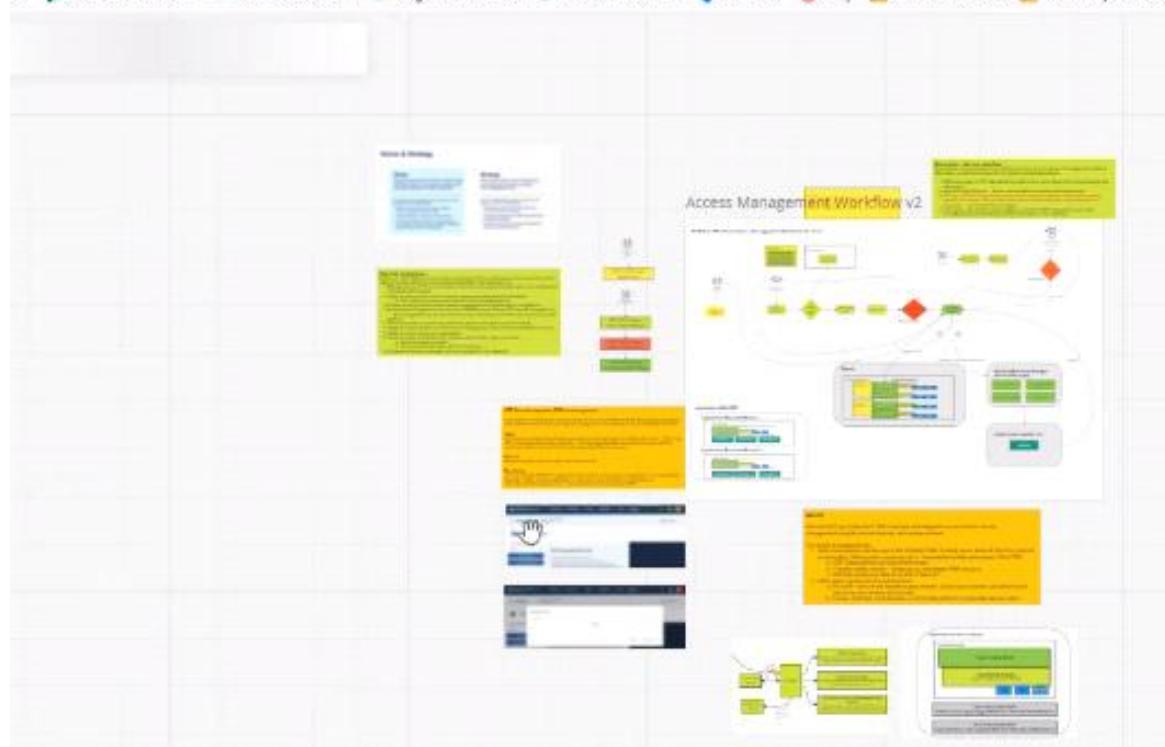
Will the data be modified in any way?

Yes

No

https://miro.com/app/board/uXjVPZNSo1w=/

D... Kate's Personal Task... DEV - Data Platform Stage - Data Platform HCP Data Platform... HCP Docs Rally General UHC Links General Optum Links





Kate Koy recording: [https://uhgazure-my.sharepoint.com/:v/g/personal/dave\\_cheema\\_optum\\_com/EW62U8i5HBDggoGkZW\\_EUABJDXi2ieYINKzKGIGnaQhQ?referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view](https://uhgazure-my.sharepoint.com/:v/g/personal/dave_cheema_optum_com/EW62U8i5HBDggoGkZW_EUABJDXi2ieYINKzKGIGnaQhQ?referrer=Teams.TEAMS-ELECTRON&referrerScenario=MeetingChicletGetLink.view.view)

Data Catalog: [HCP Data Catalog \(uhg.com\)](https://uhg.com)

[Data Product - Overview - Data Platform | HCP Docs \(uhg.com\)](https://uhg.com)

[HCP Data Catalog \(uhg.com\)](https://uhg.com)

[Submitting a Data Product Subscription - Data Platform | HCP Docs \(uhg.com\)](https://uhg.com)

<https://miro.com/app/board/uXjVMY8fjrQ/?moveToWidget=3458764550193339866&col=14>

HCP Data Governance --> A post on Miro provided by: <https://miro.com>

Public\_Cloud\_TechOps <Public\_Cloud\_TechOps\_DL@ds.uhc.com>

<https://console.hcp.uhg.com/api-management>

Look for HCP Resource Group for your ASKID / AIDE ID and Subscription [Find HCP Resource Group for PCAM - Public Cloud | HCP Docs \(uhg.com\)](#)

Demo: Metadata data product is available to learn

There is a Optum Video Channel

## RE: SDRP Instructions



Palla, Sandeep

To: Abel, Angela L

Cc: Nair, Rajesh G; Thokala, Santhosh; Shin, John S; Cheema, Dave; Majorossy, Edward

Retention Policy: UHGInbox (90 days)

Expires: 8/8/2024

Fri 5/10/2024 1:05 PM

Hi Angela

Please find the below details for test and prod accounts. Tenant prefix in dev is **UBLIA**. I hope prefix remains the same for TST and PROD.  
We created new resource groups for test and prod.

- AHAID: **ONBOARDDCDO-I-755**
- ASKID: **UHGWM110-017761**
- Resource Group (how to create a RG can be [found here](#)): **rg-isdc-tst-b2e28f1**
- Tenant name (3-15 characters - letters, and underscores only): **ISDC**
- SF Account: UHGDWAAS
- Environment (DEV,STG,TST,PRD,SIT): **TST**
- Healthcare Package (if unsure, you can select **undefined**): **undefined**
- Business Steward MSID: [douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com) (As ISDC is unified data platform, there will be multiple business stewards for each application. For now I have put as Doug)
- Technical Steward MSID: [douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)
- Technical Owner MSID: [ed\\_majorrossy@uhc.com](mailto:ed_majorrossy@uhc.com)

- AHAID: **ONBOARDDCDO-I-755**
- ASKID: **UHGWM110-017761**
- Resource Group (how to create a RG can be [found here](#)): **rg-isdc-prod-d652059**
- Tenant name (3-15 characters - letters, and underscores only): **ISDC**
- SF Account: UHGDWAAS
- Environment (DEV,STG,TST,PRD,SIT): **PRD**
- Healthcare Package (if unsure, you can select **undefined**): **undefined**
- Business Steward MSID: [douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com) (As ISDC is unified data platform, there will be multiple business stewards for each application. For now I have put as Doug)
- Technical Steward MSID: [douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)
- Technical Owner MSID: [ed\\_majorrossy@uhc.com](mailto:ed_majorrossy@uhc.com)

- Technical Owner MSID: [ed\\_majorossy@uhc.com](mailto:ed_majorossy@uhc.com)

Thanks  
Sandeep

---

**From:** Thokala, Santhosh <[santhosh\\_thokala@optum.com](mailto:santhosh_thokala@optum.com)>

**Sent:** Monday, May 6, 2024 10:50 AM

**To:** Palla, Sandeep <[sandeep.palla@optum.com](mailto:sandeep.palla@optum.com)>

**Subject:** FW: SDRP Instructions

++ Sandeep,

---

**From:** Abel, Angela L <[angela.abel@optum.com](mailto:angela.abel@optum.com)>

**Sent:** Monday, May 6, 2024 10:21 AM

**To:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>; Thokala, Santhosh <[santhosh\\_thokala@optum.com](mailto:santhosh_thokala@optum.com)>; Majorossy, Edward <[ed\\_majorossy@uhc.com](mailto:ed_majorossy@uhc.com)>

**Subject:** SDRP Instructions

Hi Team!

Self-Service Instruction:

You can still start using storage tenants, but not in the context of a full-scale migration unless you feel comfortable doing it yourself. In general, you should approach this as a new data project instead of a "port" of your existing v2 tenant.

1. You should still review your current v2 tenants and identify where it makes sense to divide their data if possible.
2. For each data division:
  1. Determine what HCP package makes most sense to use.
  2. Determine who this data division should be administered by (ie: who will be the tenant admins)
3. Based on (2), determine if you need different PRM resource groups to split up tenant administration
4. Provision a storage tenant for each data division:
  1. Determine what environments are applicable. Storage does not have a sandbox environment, so tenants should consider using dev instead.
  5. Based on (2) and (4), create your snowflake objects via HCP console for each storage tenant to sketch out how your landscape will look like
  6. If things make sense, load data from your v2 tenants into your storage tenants starting with your lowest environments.

An automated migration, once it's available, will not be a 1-1 move from v2 to storage for everyone. The two are different enough that tenants should not expect a lift-and-shift unless their v2 setup really is very simple and/or already aligns with storage tenant goals. If you are still not comfortable with this, then you should hold off.

Info needed for provisioning of Storage Tenant:

- AHAID: [ONBOARDCDCO-I-755](#)
- ASKID:
- Resource Group (how to create a RG can be [found here](#)):
- Tenant name (3-15 characters - letters, and underscores only):
- SF Account: UHGDWAAS
- Environment (DEV, STG, TST, PRD, SIT):
- [Healthcare Package](#) (if unsure, you can select **undefined**):
- Business Steward MSID:
- Technical Steward MSID:
- Technical Owner MSID:

Let me know if you need anything else or have any questions!

---

**Angela Abel** (she/her)  
SDRP . TDSaaS  
CDO | Optum Tech



# Data Product Subscription Template

Wednesday, September 18, 2024 10:45 AM

|                                               |                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Data product</b>                           | <b>UHC AARP INTERACTION TRANSCRIPTS (DP00000932)</b>                                                                                                                                                                                                                                        |
| <b>Subscription name</b>                      | UHC-AARP-ISDC-OCSS                                                                                                                                                                                                                                                                          |
| <b>Application ID</b>                         | UHGWM110-017761                                                                                                                                                                                                                                                                             |
| <b>Access group</b>                           | rg-isdc-dev-47d2500                                                                                                                                                                                                                                                                         |
| <b>Development lifecycle</b>                  | Ongoing                                                                                                                                                                                                                                                                                     |
| <b>Data access timeline</b>                   | One year                                                                                                                                                                                                                                                                                    |
| <b>Timeline Explanation</b>                   | This is an Ongoing project                                                                                                                                                                                                                                                                  |
| <b>Business serving</b>                       | Medicare&Retirement                                                                                                                                                                                                                                                                         |
| <b>Business sponsor</b>                       | Gurtej Singh                                                                                                                                                                                                                                                                                |
| <b>Business reason</b>                        | Health Care - Operations                                                                                                                                                                                                                                                                    |
| <b>Data activity</b>                          | Data analytics                                                                                                                                                                                                                                                                              |
| <b>Who will access</b>                        | Internal                                                                                                                                                                                                                                                                                    |
| <b>Intended use of data</b>                   | Get OCSS data into ISDC for various data analytics                                                                                                                                                                                                                                          |
| <b>How the data will be consumed</b>          | Query in place                                                                                                                                                                                                                                                                              |
| <b>Data be linked or aggregated</b>           | YES                                                                                                                                                                                                                                                                                         |
| <b>Explanation of activities planned</b>      | Use OCSS sales & service call center interaction data for data analytics                                                                                                                                                                                                                    |
| <b>Data be modified</b>                       | NO                                                                                                                                                                                                                                                                                          |
| <b>Offshore resources have access to data</b> | YES                                                                                                                                                                                                                                                                                         |
| <b>Global Governance Approval Link</b>        | <a href="https://uhq-egrc.archerirm.us/default.aspx?IDP=cloud&amp;requestUrl=..%2fGenericContent%2fRecord.aspx%3fid%3d26214040%26moduleId%3d735">https://uhq-egrc.archerirm.us/default.aspx?IDP=cloud&amp;requestUrl=..%2fGenericContent%2fRecord.aspx%3fid%3d26214040%26moduleId%3d735</a> |

# Worksheet

Wednesday, April 24, 2024 6:52 PM

User or Group - Enter a valid MSID or active directory group name

Product Customers

Data Producers

## Data Product

A **Data Product** lives in the intersection of business domains, organizations, and the data needed to support them. As a result, products contain significantly more technical and business metadata. Products contain references to one or more datasets that have been ingested in the metadata catalog and are typically created in the HCP Data Platform UI. Products provide a streamlined governance experience, native auditability and adhere to the standard HCP package taxonomy, and can contain multiple modalities.

Read more on how Data Producer are making sense of the vast quantity of operational and analytical data at UHG through [HCP Analytical Data Products](#)

The following table provides an overview of the data elements which are required to register a new data product on the HCP Data Platform. To register a product you need to be authorized to do so by either an HCP package owner or the HCP platform customer support team. Once you are authorized you begin the product registration process on the [HCP Data Platform](#)

From <<https://docs.hcp.uhg.com/data-catalog/data-product-overview>>

Technical Steward  
Business Steward  
Technical Owner  
Business (Steward) Data Product Owner  
Technical Owner (Product)  
Package Owner  
Package Product Lead  
Package Engineering Lead

Data Consumers

Data Analysts  
Data Scientists

Search and Discover Curated Data Products  
Access Approval and Provision of Curated Data Product.  
Create Curated Data Products from one or more datasets.  
Promote Curated Data Products to data consumers.  
Manage Curated Data product Subscription.  
Decentralized Data Package Ownership.  
Federated Computational Governance.  
Data traceability (lineage), auditability.  
Self service automated dataset ingestion-

Product Benefits

Connect data producers and consumers across the enterprise, regardless of where data exists  
Reduce time for data discoverability through a single catalog experience through pre-built, OOB integrations to several on-prem and cloud data environments.  
Reduced lift on business engineering teams supporting point to point data pipelines.  
Ability to audit access and use in once solution.  
Streamlined consumer experiences for faster data discovery, access and use.  
Streamlined producer experiences for building, deploying, governing, and maintaining of data products, so data is quality, consistent and sourced from the authoritative source.

**Dataset** A dataset is a single data resource and is the most 'raw' set of metadata. Datasets are the building blocks of data products and typically contain technical metadata extracted from the data environment itself.

Read more about HCP datasets and how to create them [here](#)

**Data Product** A data product lives in the intersection of business domains, organizations, and the data needed to support them. As a result, products contain significantly more technical and business metadata. Products contain references to one or more datasets that have been ingested into the metadata catalog and are typically created in the HCP Data Platform UI. Products provide a streamlined governance experience, native auditability and adhere to the standard HCP package taxonomy and can contain multiple modalities.

Read more on how Data Producer are making sense of the vast quantity of operational and analytical data at UHG through [HCP Analytical Data Products](#).

**Package** A package contains the power of data sharing APIs, streamlined capabilities, and data products within a domain, all in one package. Packages are powerful self-service bundles of data, capabilities, and connections. They are a consistent, reusable, resilient and scalable combination of products: APIs, data products and business events. Healthcare packages align with business domains to support enterprise-wide use cases. Be assured the quality, accuracy, and performance of each sub package meets enterprise governance standards.

- [Discover Data](#)
- [Add Metadata](#)
- [Add Glossary Terms](#)
- [Join Office Hours](#)
- [Join a Worthy 30 Brown Bag](#)
- [Connect on Teams](#)
- [Submit Feedback](#)

**Subscribe to Data Product:** Subscribing to the data product is the first step to gaining read-access to the data product. View the Dataset at [HCP Data Platform site](#). Once the request to access the data product has been approved, you may proceed to the next steps related to authenticating to Snowflake database to view different datasets.

From <<https://docs.hcp.uhg.com/engineering-excellence/access>>

## Compute Tenant Overview

Compute Tenancy provides the ability to consume data that is available on HCP data catalog quickly and securely. To consume the data, tenants can search for required data products and request for access directly on [Data Catalog](#). A Compute tenant provides a user with a group of resources like databases, warehouses and schemas to consume data products.

### High Level Process Flow

1. Data consumer requests the subscription for the required data products in HCP Data Catalog

2. Once the request is approved, HCP Data Catalog creates 3 resources
  - o Identity Resource - Creates all the Snowflake objects along with Identity Access Role and Functional Role
  - o Subscription Resource - Creates Access Role for Subscription
  - o Identity User Resource - Grants Functional Role to the User
3. Then all the compute tenant resources are created in PRM and Snowflake and privileges to these resources are granted to Access Roles and then to Functional Role
4. If data consumer is already an existing snowflake user, then the Functional Role is granted to the user
5. If data consumer is not an existing snowflake user, then secure access request is created to grant a snowflake access to user
6. The secure access request needs approval and it might take 2 hours to create a new snowflake user and then the Functional Role is granted to newly created user
7. Data consumer should only use the Functional Role **RG\_NAMESPACE\_CMPT\_ROLE** to perform actions on the data products.
8. The data consumer can be removed from the list of users in HCP Data Catalog, thus revoking all the privileges granted to data consumer on data product
9. Data consumer can also destroy all the resources by making a request to HCP Data Catalog, thus deleting all compute resources from PRM and Snowflake

## Resource Group

- A Resource Group is a logical container to place all the related PRM resources. Resource Group creates PRM Namespace so that any PRM Resources provisioned within a Resource Group are automatically placed within that PRM Namespace. To create a Resource Group from HCP Console [click here](#).
- Application teams can create as many Resource Groups under an AskID as they wish
- Data consumers can leverage HCP Data Catalog's subscription process to create compute tenants for the resource group
- 1 resource group can have only 1 compute tenant aligned to it in PRM

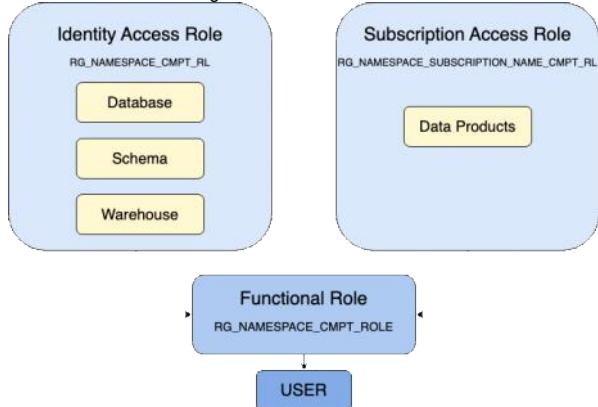
## Role Hierarchy

Info Functional Role **RG\_NAMESPACE\_CMPT\_ROLE** has all the privileges to perform actions on both compute resources and data products. So, user should only use Functional Role to perform actions required for business use cases. :::

**Compute tenancy has 2 access roles to which privileges on Snowflake objects can be granted or revoked**

- Identity Access Role **RG\_NAMESPACE\_CMPT\_RL** - This role has access control privileges to access and perform operations on the objects created by identity resource
- Subscription Access Role **RG\_NAMESPACE\_SUBSCRIPTION\_NAME\_CMPT\_RL** - This role has access control privileges to access and perform operations on the data objects that is requested by the data consumer

These Access Roles are granted to the Functional Role which will inherit the privileges granted to the access roles and then Functional Role is granted to the user.



Row level access - no longer need to create views to accommodate it

Matt from Snowflake

Rajesh speaking

In storage tenancy, on the data producer side, there are 3 roles (Developer, support, Analyst)

These roles are at the schema level

3 roles in storage tenancy (), utilized by the producer

Roles get set of permissions

For consumptions the data and the metadata is published into the data catalog

data is packaged into data products and consumer consume data products

you could setup container level roles and apply those policies to control who get access to which portion of the data

And still expose data thru data products

Container roles are used to narrow focused permissions

We create a Compute tenancy

When user clicks to subscribe data, an internal Compute Tenancy starts and enable consumer to access data they are allowed to see. It is all automated.

Functional role is provisioned to you, which allows you to use data products and the infrastructure to provide allowed results

You can add more data products to the same functional role

Functional role can support multiple end users as well

When you request for a subscription you're choosing a resource group, that attaches it to your AIDE id.

That resource group gets an access group underneath that where you can maintain who has who has access to that that subscription

By default, the person who requests for the subscription becomes an administrator of that subscription. They can manage that subscription. They don't have view permissions. If they want it, they need to ask for it explicitly

They have admins or contributors to make changes/additions in that subscription

Admins of the Access Group can only maintain their own subscription

Members of the HCP console group maintain the infrastructure

After a user get approved to get access to a data product, he/she gets an email describing which link and which role to use to view their allowed data

Admin will add the rest of the users.

Internal team members are responsible for building the solution  
Publishers would be given access via the roles that are defined on the underlying asset.  
Business users who are consuming that data for reporting or analytics purposes would be basically given access to various products

A user can be a part of multiple subscriptions  
The tracking of usage is by subscription  
There can be multiple subscriptions to a product  
It is evolving  
You can store temporary dataset in the compute tenancy provided space

All users have access to the same schema for consumers

In storage tenancy, you would create policies using the container roles to gain finer-grain access control  
You would have to go to Secure to get access to those fine grain controls  
The catalog team is working on getting that added to the catalog provisioning process

Currently, it's a secondary step through which you go to get access  
The roles will be applied in the storage tenancy, you create row level policies

## \*\*\*\*\* **Data producers**

Data producers can use SDRP to publish datasets for multiple consumption patterns – analytical, reporting, data exporting and more – in near-real time or on a set schedule with minimal impacts to operational data stores. SDRP allows producers to control access based on data privacy restrictions.

## **Data consumers**

Analysts may use SDRP to derive insights from a multitude of enterprise datasets in one place without the pains of data engineering. SDRP allows users to seamlessly scale and de-scale analytical activities based on need without acquiring and managing infrastructure.

Data producers in SDRP should use **Storage tenancy** and expose their Data products via the CDO Data Catalog Data Consumers in SDRP would use Compute tenancy provisioned via the subscription process via the CDO Data Catalog

**V2** tenants can also expose their data products via the catalog. Consumption will occur via Compute tenancy. V2 tenants should plan on migrating to Storage tenancy to make use of all the benefits of using Storage tenancy solution.

- **V2 tenant** - This tenancy model supports use-cases where you need to publish data (as a producer) for others or your team to consume. This is the tenancy model most widely used today. It relies on numerous secure roles to provision access and drives tenants to own data governance processes. Customers will need to use the SDRP Github self-service process to setup this type of tenancy. [More Info](#)
- **Storage tenant** - A refined tenancy model that caters to Data Producers. Expectation is V2 tenancies will need to migrate this. Customers will be using SDRP HCP Console to setup this tenancy. [More Info](#)

## **Storage Tenant Overview**

A storage tenant is an SDRP operational model that provides an opinionated framework for data producers to set up and build logically separated and secure Snowflake datasets. Specifically designed to reduce data duplication and to encourage teams to think of their datasets as **data applications**.

### **Benefits of Storage Tenancy Model:**

- **Efficient Onboarding:** Simplifies tenant onboarding process, reducing time to onboard from days to hours
- **Granular Data Control:** Enables data producers to have fine-grained control over their data
- **Alignment with HCP Package Model:** Aligns with the HCP package model that simplifies data governance and data sharing
- **Data Reusability:** Ensures data from trusted sources is brought in once and reused across multiple applications
- **Enhanced Data Security:** Shifts from individual-specific AR roles to application-specific functional roles, reducing role proliferation
- **Simplified Role Management:** simplified roles, granting the right permissions in the right context, reducing complexity in role management
- **Data Discovery and Governance:** Data Catalog and Subscription services allow tenants to discover, govern, and share data
- **Decentralized Ownership:** decentralized development and ownership enable multiple storage tenants to suit different access and isolation needs
- **Role Flexibility:** Enables users to carry multiple functional roles to choose their role based on their job requirements
- **Data Duplication Mitigation:** reduces **data duplicity and improving data efficiency**
- **Design data applications based how the data will be loaded, processed and consumed**
- **Access to schemas is governed by three persona roles: developer, support and analyst.**
- **A resource group is a PRM (Platform Resource Manager) concept that allows application owners to segregate their tenancies into logical containers. Tenants deployed in one resource group have no visibility into tenants deployed in other resource groups.**
- **Teams may provision multiple resource groups per AIDE application**
- **Each resource group is allowed to contain multiple storage tenants**
- **Customers are responsible for managing access to their resource groups**

- \*\*\*\*\*
- **Refined Structure** - Dev, Support, Analyst functional roles enables right sizing tenancies to Data Apps. Reduction in number of secure roles
  - **Provisioning Speed** - Provide state of the art infrastructure management utilizing HCP Console and PRM and very quick provisioning (weeks to minutes)
  - **Tight Integration with Data Catalog and HCP ecosystem** - Tenants do not have to setup their own governance processes. Enable future capabilities for Finance reporting, Cost management recommendations and tracking compliance.

**Storage tenant** is an SDRP operational model that provides an opinionated framework for data producers to set up and build logically separated and secure Snowflake datasets  
It reduces data duplication.

**Compute Tenancy** enables consumption of data available in HCP data catalog quickly and securely

- Need for Storage Tenant:
  - **Refined Structure** - Dev, Support, Analyst functional roles reduce number of secure roles
  - **Provisioning Speed** - HCP Console and PRM reduce provisioning from weeks to minutes
  - **Tight Integration with Data Catalog and HCP ecosystem** - No need to setup your own governance processes. Built-in Finance reporting, Cost management tracking and recommendations
- Summary of what is a Storage Tenant and Compute Tenant
  - **Storage tenant** is an SDRP operational model that provides an opinionated framework for data producers to set up and build logically separated and secure Snowflake datasets

- It reduces data duplication.
- **Compute Tenancy** enables consumption of data available in HCP data catalog quickly and securely
- What's involved in moving from V2 to Storage Tenant
  - Migration involves provisioning a storage tenant, creating Snowflake objects and loading your tables from your existing V2 tenants
  - DWaaS team can help you clone existing data structures and data into the Storage Tenant

| V2 Tenant                                                            | Storage Tenant                                                                           |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Relies on numerous secure roles to provision access                  | Needs only three functional roles                                                        |
| Data discovery is available only thru documents and tribal knowledge | Data Catalog and Subscription services allow tenants to discover, govern, and share data |
| Lowest level security supported is at the Schema level               | Data producers have fine-grained control over their data                                 |
| Provisioning is lengthy and laborious                                | HCP Console and PRM reduce provisioning from weeks to hours                              |
| Fine-grain access control achieved through Views                     | No need to create views, using container roles you can achieve the same                  |

## Storage Tenancy Model based Access Control

### Need for Storage Tenant:

- SDRP is "decommissioning" the V2 tenant model and transitioning all tenants into a Storage Tenant model
- SDRP V2 tenants are expected to transition over to Storage Tenant model by Q2/Q3

### Summary of what is a Storage Tenant (+Compute Tenant)

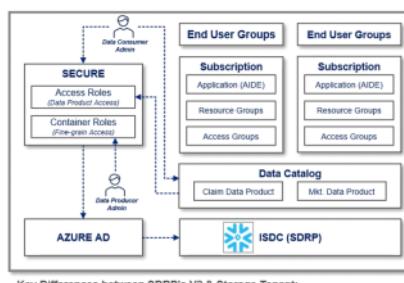
- Storage tenant is an SDRP operational model that provides an opinionated framework for data producers to set up and build logically separated and secure Snowflake datasets. It reduces data duplication
- Compute Tenancy enables consumption of data available in HCP data catalog quickly and securely

### What's involved in moving from V2 to Storage Tenant

- Involves provisioning a SDRP storage tenant, creating Snowflake objects, and migrating tables from existing V2 tenants
- Migration of tables can be done by doing a CLONE of existing tables into the Storage Tenancy

### Responsibilities of Data Producer AND Data Consumer:

| Step | Data Producer                                                             | Data Consumer                                                         |
|------|---------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 1    | Build solution                                                            |                                                                       |
| 2    | Package data into data products & publish data products into data catalog | Create Application ID for financial (GL) billing of consumption usage |
| 3    |                                                                           | Browse data catalog & subscribe to data product                       |
| 4    | Define container roles                                                    | Add users to user groups                                              |
| 5    | Create fine-grain access policies                                         | Get email notification, specifying the URL and the access role to use |
| 6    |                                                                           | Request container roles in SECURE                                     |
| 7    |                                                                           | Use data to carry out tasks                                           |



### Key Differences between SDRP's V2 & Storage Tenant:

| V2-Tenant                                                            | Storage-Tenant                                                                |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Numerous secure roles to provision access                            | Only three functional roles                                                   |
| Data discovery is available only thru documents and tribal knowledge | Data Catalog and Subscription services allow discover, govern, and share data |
| Lowest level security supported is at the Schema level               | Data producers have fine-grained control over their data assets               |
| Provisioning is lengthy and laborious                                | HCP Console and PRM reduce provisioning from weeks to hours                   |
| Fine-grain access control achieved through Views                     | No need to create Views, using container roles you can achieve the same       |

## PI Planning: DEEP ETL Migration

Program increment planning for DEEP capturing and outlining the "true" work to be done in sufficient detail with an outcome-based approach.

| Actively Running in PROD: |                      | Under Development: |                      | No Need:      |                      |
|---------------------------|----------------------|--------------------|----------------------|---------------|----------------------|
| ComponentType             | Number of Components | ComponentType      | Number of Components | ComponentType | Number of Components |
| - Hive DDLs               | 190                  | - Hive DDLs        | 39                   | - Hive DDLs   | 17                   |
| Complex                   | 63                   | Complex            | 5                    | Complex       | 16                   |
| Medium                    | 39                   | Medium             | 20                   | Medium        | 1                    |
| Simple                    | 39                   | Simple             | 12                   | NA            | 1                    |
| (Blank)                   | 49                   | (Blank)            | 2                    | R Model       | 5                    |
| - JAVA                    | 2                    | - Python Script    | 5                    | NA            | 1                    |
| Medium                    | 2                    | Medium             | 2                    | R Model       | 2                    |
| - MYSQL                   | 2                    | Simple             | 3                    | SPARK         | 3                    |
| Medium                    | 2                    | R Model            | 1                    | Complex       | 1                    |
| - Python Script           | 16                   | Medium             | 1                    | Grand Total   | 17                   |
| Complex                   | 1                    | Grand Total        | 45                   |               |                      |
| Medium                    | 8                    |                    |                      |               |                      |
| Simple                    | 7                    |                    |                      |               |                      |
| - R Model                 | 7                    |                    |                      |               |                      |
| Complex                   | 7                    |                    |                      |               |                      |
| - Shell Script            | 9                    |                    |                      |               |                      |
| Complex                   | 5                    |                    |                      |               |                      |
| - SPARK                   | 3                    |                    |                      |               |                      |
| Complex                   | 3                    |                    |                      |               |                      |
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| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (Blank)                   | 1                    |                    |                      |               |                      |
| Complex                   | 11                   |                    |                      |               |                      |
| Medium                    | 13                   |                    |                      |               |                      |
| Simple                    | 34                   |                    |                      |               |                      |
| (                         |                      |                    |                      |               |                      |

```
sql = "SELECT * FROM <table_name>"  
stmt = ibm_db.exec_immediate(conn, sql)
```

5. Set the batch size:

```
batch_size = 100
```

6. Fetch the data in batches:

```
result_set = ibm_db_dbi.fetch_many(stmt, batch_size)  
while result_set:  
    # Process the fetched data  
    for row in result_set:  
        # Access the row data  
        print(row)  
    # Fetch the next batch  
    result_set = ibm_db_dbi.fetch_many(stmt, batch_size)
```

7. Close the database connection:

```
ibm_db.close(conn)
```

+++++  
All, here are the results of the last run of the ISDW Legacy data migration process using Python code:

| Source Table Name    | Snowflake Table Name         | Source Rows | Target Rows |
|----------------------|------------------------------|-------------|-------------|
| APPLICATION_QUESTION | APPLICATION_QUESTION_HISTORY | 1503378     | 1503378     |
| APPLICATION_AGENT    | APPLICATION_AGENT_HISTORY    | 44726       | 44726       |
| ACCOUNT_RECEIVABLE   | ACCOUNT_RECEIVABLE_HISTORY   | 8937639     | 8937639     |
| CLM_HIST_BKP_2904    | CLM_HIST_HISTORY             | 1020228531  | 1020228531  |

Time it took to complete: Completed in :-9:25:20.439425.

Note: this process can easily be used to migrate all/any data, should you want to proceed with that option. Also, when the source data is extracted and dropped in a designated UNIX folder, the process of compressing, moving to internal stage, and copy into Snowflake is quite fast. I can share the results of that as well, should that be of interest to you.

Thank you.

+++++  
batchCount=batch[0]  
currentStart=batch[1]  
currentEnd=batch[2]

```
WITHcts_dtAS(SELECTDISTINCTtrunc(CREATED_DATE) AScreated_dateFROMFOX_APP_ISDW.FF_PROF_CLM_837)  
,hour_blocksAS(SELECTcreated_date+ LEVEL* INTERVAL'{split_interval_hours}'HOUR$block_start, created_date+ (LEVEL+ 1) * INTERVAL'{split_interval_hours}'HOUR-  
INTERVAL'1 SECOND$block_end  
FROMcts_dtCONNECTBYLEVEL< 12)  
SELECTROWNUMASrow_count, TO_CHAR(startValue, 'DD-MON-YYYY HH:MI:SS AM') startValue  
,TO_CHAR(endValue, 'DD-MON-YYYY HH:MI:SS AM') endValueFROM(SELECTtrunc(created_date) assstartValue  
,trunc(created_date)+INTERVAL '{split_interval_hours}'HOUR- INTERVAL'1 SECOND$endValue  
fromcts_dtUNIONSELECTblock_startASstartValue,block_endASEndValueFROMhour_blocksorderby1)
```

+++++  
Main | Oracle properties | Driver properties | SSH | + Network configurations...

Connection Type:

|           |                    |               |                                  |
|-----------|--------------------|---------------|----------------------------------|
| Basic     | TNS                | Custom        |                                  |
| Host:     | ed21db02-vip       | Port:         | 1521                             |
| Database: | iswdv03svc.uhc.com | Service Name: | <input type="button" value="▼"/> |

Authentication

|                 |                        |                                                   |                                  |
|-----------------|------------------------|---------------------------------------------------|----------------------------------|
| Authentication: | Oracle Database Native |                                                   |                                  |
| Username:       | SVC_ACT_DEV3_ISDWETL   | Role:                                             | Normal                           |
| Password:       | *****                  | <input checked="" type="checkbox"/> Save password | <input type="button" value="▼"/> |

Client: OraClient19Home1

# Historical Data Migrations

Saturday, April 20, 2024 9:30 AM

**ISDC-Future State Data Organization.xlsx:** C:\Users\dcheema\Documents\OAS\Projects\MRIS Modernization\Work Items\MRIS Modernization 2024\Data Migration Oracle 2 Snowflake\Historical DataMigration Lists - Excel\ISDC-Future State Data Organization.xlsx

**ISDW Roles by Table and Column - 20240429 ISDW - WIP v0.1.xlsx:**

C:\Users\dcheema\Documents\OAS\Projects\MRIS Modernization\Reference Material\MRIS Provided Artifacts\ISDW and ODS\ISDW\ISDW Roles by Table and Column - 20240429 ISDW - WIP v0.1.xlsx

SMART Replication Tables: [SMART Replication Tables.xlsx](#)

Replication tables: 21

Biggest tables: 703 M, 645 M

One-time load: 15 tables, biggest table: 61 M rows.

[Yesterday 10:37 PM] Cheema, Dave

Verma, Aditi, table **DB2PROD.RTO\_CONTACT\_HISTORY** does not have a unique index in it. How can you identify a unique row in this table? It seems like all columns, except for one are duplicate. Please help me identify unique rows. Thank you.

**Notes from SMART replication migration planning:**

1. All rows are duplicate in table: **DB2PROD.RTO\_CONTACT\_HISTORY**. **How do we identify unique rows?**
2. DSS\_UNIVERSAL\_SEGMENT\_DATA has no unique key. How do we identify unique rows?
3. **County\_module\_sa** not found in DB2PROD
4. dgtl\_uhgmrprod\_hit\_data\_azure\_ext\_vw is not found in the tables or views in DB2PROD
5. dgtl\_uhgmrprod\_visit\_azure\_ext\_vw is not found in the tables or views in DB2PROD
6. dgtl\_uhgmrprod\_visit\_member\_azure\_ext\_vw is not found in the tables or views in DB2PROD
7. ms\_dynamic\_marketing\_randoms is not found in the tables or views in DB2PROD

\*\*\*\*\*

**Historical Data Migration:**

Master Data List (ISDW+DEEP).xlsx

SMART Replication Tables.xlsx

\*\*\*\*\*

Offset = 0

maxBatchSize = 1000

Row\_count = 3222

While Offset < Row\_count:

```
SELECT * FROM DB2PROD.DSS_HMO_PEN
ORDER BY STATE_CODE, FIPS_COUNTY_CODE
OFFSET {Offset} ROWS
FETCH FIRST {maxBatchSize} ROWS ONLY;
Create .csv file;
Offset = Offset + maxBatchSize;
```

```
SELECT * FROM DB2PROD.DSS_HMO_PEN
ORDER BY
```

```
OFFSET {Offset} ROWS
```

```
FETCH FIRST {maxBatchSize} ROWSONLY;
```

```
Offset = Offset + {maxBatchSize}
```

```
SELECT * FROM DB2PROD.DSS_HMO_PEN
ORDER BY STATE_CODE, FIPS_COUNTY_CODE
OFFSET 0+1000 ROWS
FETCH FIRST 1000 ROWSONLY;
```

```
SELECT * FROM DB2PROD.DSS_HMO_PEN
ORDER BY STATE_CODE, FIPS_COUNTY_CODE
OFFSET 0+1000+1000 ROWS
FETCH FIRST 1000 ROWSONLY;
```

```
SELECT * FROM DB2PROD.DSS_HMO_PEN
ORDER BY STATE_CODE, FIPS_COUNTY_CODE
OFFSET 0+1000+1000+1000 ROWS
FETCHFIRST 1000 ROWSONLY;
```

\*\*\*\*\*

**Hive Edge Migration:**

[Monday 9:37 AM] Bangale, Gaurav  
jdbc:hive2://rn000069935:10195

[Tuesday 12:01 PM] Bangale, Gaurav  
Non-Prod:- rn000069935  
Prod:- rp000062284

For codebase:-

Non-Prod  
/mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts

Prod  
/mapr/datalake/optum/optuminsight/p\_dlz/ism/prd/p\_scripts/

Github repo

Non-Prod

[https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-nonprod/ism/hive\\_sqauth/dev/d\\_scripts](https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-nonprod/ism/hive_sqauth/dev/d_scripts)

Prod:-

[https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-prod/ism/prd/p\\_scripts](https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-prod/ism/prd/p_scripts)

Incident for azcopy installation on dev

INC36988394

[Tuesday 12:01 PM] Bangale, Gaurav  
compas refined location for starting sample codes /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/hive/warehouse/refined\_compas.db

[Tuesday 12:04 PM] Bangale, Gaurav  
Please request unix groups ismdedev, DAP\_USERS\_DEV  
DAP\_USERS\_PRD  
ismgpprd  
ismdeprd if not already having

[Tuesday 12:05 PM] Bangale, Gaurav  
ADF pipelines for loads are here under legacy folder

[Tuesday 12:05 PM] Bangale, Gaurav

| Pipelines                       |     | 98 |
|---------------------------------|-----|----|
| PRE_CLM                         | ... |    |
| Legacy                          | 28  |    |
| tsk_LEGACY_INST_CLAIM_PART_bkp  |     |    |
| wf_LEGACY_CLG_MSG               |     |    |
| wf_LEGACY_CLG_MSG_ERRORS        |     |    |
| wf_LEGACY_COMPAS_BILLING_TABLES |     |    |
| wf_LEGACY_DB2IMPORT             |     |    |
| wf_LEGACY_FOX_POSTADJ_IMPORT    |     |    |
| wf_LEGACY_FOXIMPORT             |     |    |
| wf_LEGACY_INST_CLAIM_CLMNBR     |     |    |
| wf_LEGACY_INST_CLAIM_EXTRACT    |     |    |
| ...                             |     |    |

# Edge Node DB2 Server

Tuesday, May 7, 2024 11:06 AM

```
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last failed login: Tue May 7 11:05:15 CDT 2024 from 10.195.232.27 on ssh:notty
There was 1 failed login attempt since the last successful login.
Last login: Mon May 6 03:10:24 2024 from 10.131.137.77
bganesh@rn000069935:/home/bganesh
$ [REDACTED]
```

```
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last failed login: Tue May 7 11:05:15 CDT 2024 from 10.195.232.27 on ssh:notty
There was 1 failed login attempt since the last successful login.
Last login: Mon May 6 03:10:24 2024 from 10.131.137.77
bganesh@rn000069935:/home/bganesh
$ cd /mapr/datalake/optum/optuminsight/d_dlz/ism/hive_sqauth/hive/warehouse/refined_compas.db/agent_commissions_error_log
$ bganesh@rn000069935:/mapr/datalake/optum/optuminsight/d_dlz/ism/hive_sqauth/hive/warehouse/refined_compas.db/agent_commissions_error_log
$ ls -ltr
total 974
-rw-rwx---. 1 isbsqgadd ismgpdev 997334 Aug 10 2023 000000_0
$ [REDACTED]
```

[Yesterday 9:37 AM] Bangale, Gaurav  
jdbc:hive2://rn000069935:10195

[12:01 PM] Bangale, Gaurav  
Non-Prod:- rn000069935  
Prod:- rp000062284

For codebase:-

Non-Prod  
/mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts

Prod  
/mapr/datalake/optum/optuminsight/p\_dlz/ism/prd/p\_scripts/

Github repo

Non-Prod  
[https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-nonprod/ism/hive\\_sqauth/dev/d\\_scripts](https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-nonprod/ism/hive_sqauth/dev/d_scripts)

Prod:-  
[https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-prod/ism/prd/p\\_scripts](https://github.com/optum-enterprise-data-analytics/UHCRNA-DLZ-ISMARKETING/tree/master-prod/ism/prd/p_scripts)

Incident for azcopy installation on dev

INC36988394

[12:01 PM] Bangale, Gaurav  
compas refined location for starting sample codes /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/hive/warehouse/refined\_compas.db

[12:04 PM] Bangale, Gaurav  
Please request unix groups ismdedev, DAP\_USERS\_DEV  
DAP\_USERS\_PRD  
ismgpprd  
ismdeprd if not already having

[12:05 PM] Bangale, Gaurav  
ADF pipelines for loads are here under legacy folder

[12:05 PM] Bangale, Gaurav

| Pipelines                       | 98  |
|---------------------------------|-----|
| PRE_CLM                         | ... |
| Legacy                          | 28  |
| tsk_LEGACY_INST_CLAIM_PART_bkp  |     |
| wf_LEGACY_CLG_MSG               |     |
| wf_LEGACY_CLG_MSG_ERRORS        |     |
| wf_LEGACY_COMPAS_BILLING_TABLES |     |
| wf_LEGACY_DB2IMPORT             |     |
| wf_LEGACY_FOX_POSTADJ_IMPORT    |     |
| wf_LEGACY_FOXIMPORT             |     |
| wf_LEGACY_INST_CLAIM_CLMNBR     |     |
| wf_LEGACY_INST_CLAIM_EXTRACT    |     |
| ...                             |     |

[12:05 PM] Bangale, Gaurav  
Will connect with you tomorrow in case of issues.. Good Day



# DMExpress Conversion

Friday, February 2, 2024 1:55 PM

**While there's no direct automated conversion process, here's a guide to effectively convert DMExpress code to SQL:**

**1. Understanding DMExpress and SQL:**

- Grasp the syntax and structures of **both languages**. This will help you identify equivalent constructs and create accurate SQL representations.
- Be aware of **functional differences**: DMExpress offers features like data partitioning and custom load tasks that may require additional SQL code or workarounds.

**2. Analyze DMExpress Code:**

- **Review the code in segments:** Break down the DMExpress code into smaller, manageable blocks.
- **Identify key DMExpress constructs:** Focus on transformations, joins, filters, aggregations, and loading operations.

**3. Map DMExpress Constructs to SQL Equivalents:**

- **Transformations:**
  - DMExpress COMPUTE statements often translate to SQL SELECT statements with expressions for calculations and formatting.
  - DMExpress JOIN operations have direct counterparts in SQL JOIN clauses.
- **Filters:**
  - DMExpress SELECT statements with WHERE clauses map to SQL SELECT statements with WHERE clauses.
- **Aggregations:**
  - DMExpress SUMMARIZE statements often correspond to SQL GROUP BY and aggregate functions.
- **Loading:**
  - DMExpress OUTPUT statements might translate to SQL INSERT statements, potentially involving bulk loading techniques.

**4. Compose SQL Statements:**

- **Construct SQL statements based on the mapped constructs.**
- **Pay attention to syntax differences and data types.**
- **Handle DMExpress-specific features:**
  - For partitioning, consider SQL's PARTITION BY clause or external tools for parallel processing.
  - For custom load tasks, explore SQL's scripting capabilities or external tools for data loading.

**5. Test and Refine:**

- Execute SQL code against a test database.
- Compare results with DMExpress output.
- Refine SQL code as needed.

**Additional Tips:**

- Consult DMExpress and SQL documentation for reference.
- Leverage knowledge of the specific database system for optimization.
- Consider using SQL development tools for code generation and testing.
- For complex conversions, seek guidance from DMExpress or SQL experts.

---

**CodeXchange:** [Optum EDA CodeXchange](#)

EDP - User Access Remediations

Thursday, April 4, 2024 4:07 PM

# Sojan's Ask

Wednesday, February 14, 2024 6:09 PM

See below a high level summary of Apps DBA workload for different applications including ISDW. Should we go over this with OAS to figure out how these activities will be handled in Snowflake ?

| Applications DBA work load                                                                                                                                                                                                                                 |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 50% Support to Application Teams                                                                                                                                                                                                                           |  |
| Support all phases of the software development lifecycle.                                                                                                                                                                                                  |  |
| Work closely with development and architecture teams to properly engineer effective database solutions that ensure reliability, quality, and scalability.                                                                                                  |  |
| Assist problem resolution for all development, test, and production database environments, recommend technology adoption that will enhance database management capabilities                                                                                |  |
| GIT/Jenkins source code control                                                                                                                                                                                                                            |  |
| Provide support for releases                                                                                                                                                                                                                               |  |
| Helps teams writing efficient SQL queries and PL/SQL code                                                                                                                                                                                                  |  |
| Review and enforce coding standards.                                                                                                                                                                                                                       |  |
| 30% Database Administration                                                                                                                                                                                                                                |  |
| Database refreshes and work with masking team to protect PHI/PII data.                                                                                                                                                                                     |  |
| Create and maintain roles and privileges.                                                                                                                                                                                                                  |  |
| Capacity planning, monitoring space utilization, tablespace reorg activities to improve performance /to reclaim the unused space.                                                                                                                          |  |
| Appdba are point of contact for all database-related issues and take ownership of the relationship with Optum Managed Services Oracle DBA team.                                                                                                            |  |
| Appdba support all infrastructure projects where we have changes to database.                                                                                                                                                                              |  |
| 10% Production Support                                                                                                                                                                                                                                     |  |
| Resolve complex incidents like Data issues, performance tuning and any other DB related issue                                                                                                                                                              |  |
| 10% TDM Support                                                                                                                                                                                                                                            |  |
| Provide support to test data team(TDM) on regular basis that includes providing data subset solutions, creating DDLs, resolving access issue like missing grants, provides support for any oracle errors, running queries, taking backup of schemas/tables |  |

**Snowflake DBAs are responsible** to ensure the smooth operation, security, and performance of Snowflake-based data platforms. Key responsibilities:

1. **Account and User Management:**
  - o Creating and managing Snowflake accounts, users, and roles.
  - o Defining and assigning appropriate access controls to ensure data security and compliance.
  - o Monitoring user activity and auditing access logs for security purposes.
2. **Security and Compliance:**
  - o Implementing and maintaining robust security measures to protect sensitive data.
  - o Configuring Snowflake features like secure views, dynamic data masking, and row-level security.
  - o Staying up-to-date on security best practices and industry regulations.
3. **Performance Optimization:**
  - o Monitoring and analyzing query performance to identify bottlenecks and optimize queries.
  - o Tuning virtual warehouses to balance cost and performance needs.
  - o Utilizing Snowflake features like materialized views and clustering to improve query speed.
4. **Data Management:**
  - o Designing and implementing data pipelines for loading and ingesting data into Snowflake.
  - o Monitoring data quality and ensuring data integrity.
  - o Implementing data governance policies and procedures.
5. **Backup and Recovery:**
  - o Establishing regular backup schedules and procedures to ensure data protection.
  - o Testing backup and recovery processes to ensure data can be restored quickly in case of failures.
  - o Minimizing downtime and data loss in the event of an outage.
6. **Cost Management:**
  - o Monitoring and optimizing Snowflake usage to control costs.
  - o Identifying and eliminating unused resources.
  - o Utilizing Snowflake pricing models and features to optimize cost efficiency.
7. **Automation and Scripting:**
  - o Automating repetitive tasks using Snowflake-supported tools and languages like Python.
  - o Developing scripts to streamline administration and maintenance activities.
  - o Integrating Snowflake with other cloud services and applications.
8. **Collaboration and Support:**
  - o Working with developers, data analysts, and other stakeholders to understand their data needs.
  - o Providing technical support and guidance on using Snowflake effectively.
  - o Staying up-to-date on Snowflake best practices and new features.

- Additional Responsibilities:**
- o Staying up-to-date on the latest Snowflake features and functionality.
  - o Participating in the Snowflake community and forums.
  - o Continuously learning and expanding their knowledge of data warehousing and cloud computing.

By fulfilling these responsibilities, Snowflake DBAs play a critical role in ensuring the success of data-driven initiatives within their organizations.

**Snowflake architects** play a crucial role in designing, implementing, and maintaining efficient and secure data platforms on Snowflake, a popular cloud-based data warehouse. Their responsibilities encompass a wide range, typically falling into three main categories: **Architecture, Implementation, and Optimization.**

#### Architecture:

- **Data Strategy:** Collaborate with stakeholders to understand business needs and translate them into a data architecture aligned with those goals.
- **Data Modeling:** Design logical, conceptual, and physical data models for optimal performance and scalability.
- **Security Design:** Implement secure data access controls and governance policies to ensure data integrity and compliance.
- **Cloud Optimization:** Leverage Snowflake's cloud-native features to optimize storage, compute, and cost efficiency.

#### Implementation:

- **Deployment:** Oversee the deployment of Snowflake on the chosen cloud platform (e.g., AWS, Azure, GCP).

- **Data Ingestion:** Design and implement data pipelines for loading data from various sources into Snowflake.
- **Security Configuration:** Configure access controls, user roles, and security settings based on organizational policies.
- **Performance Tuning:** Monitor performance metrics and tune queries and data pipelines for optimal resource utilization.

#### Optimization:

- **Monitoring and Reporting:** Continuously monitor Snowflake performance and generate reports to identify bottlenecks and opportunities for improvement.
- **Cost Management:** Analyze and optimize cloud resource usage to ensure cost-effectiveness.
- **Scalability Planning:** Prepare for future data growth and user demands by scaling the Snowflake platform appropriately.
- **Technology Updates:** Stay updated on the latest Snowflake features and best practices, recommending and implementing upgrades when necessary.

#### Additional responsibilities:

- Collaborate with data engineers, data analysts, and other stakeholders to ensure smooth data flow and utilization.
- Provide ongoing support and training to users on Snowflake features and functionalities.
- Stay abreast of industry trends and advancements in cloud data warehousing technologies.

The specific responsibilities of a Snowflake architect can vary depending on the organization, industry, and project scope. However, the core focus remains on creating a reliable, secure, and efficient data platform that empowers data-driven decision making.

Do you have any specific questions about the responsibilities of a Snowflake architect?

---

**Snowflake itself doesn't require database refresh**, as it maintains a single source of truth for its data. However, depending on your use case, databases within Snowflake might need refreshing in different scenarios:

#### Replicating databases:

- If you need to have a secondary copy of your database for disaster recovery or geographical availability, you can set up **replication**. This process involves regularly refreshing the secondary database with changes from the primary database.
- Replication can be automatic (scheduled) or manual. You can define the desired refresh interval based on your needs.

#### Dynamic tables:

- Snowflake offers **dynamic tables**, which automatically refresh based on changes in other tables. These are used for generating aggregates or materialized views from base tables.
- You can define a target lag time for dynamic tables, specifying how soon after the base table updates they should be refreshed.

#### Other use cases:

- You might need to refresh external tables if the underlying data source changes.
- Occasionally, you might manually refresh a table for specific reasons, like after data loading or cleaning.

In summary, while Snowflake doesn't inherently require database refresh, replication, dynamic tables, and specific use cases might necessitate it. The approach and frequency depend on your individual needs.

For further understanding, here are some helpful resources:

- Replication: <https://docs.snowflake.com/en/user-guide/account-replication-intro>
- Dynamic tables: <https://docs.snowflake.com/en/user-guide/dynamic-tables-about>
- Information schema functions for tracking refresh progress: [https://docs.snowflake.com/en/sql-reference/functions/database\\_refresh\\_progress](https://docs.snowflake.com/en/sql-reference/functions/database_refresh_progress)

I hope this clarifies! Let me know if you have any other questions.

---

**Snowflake tables don't require manual table space reorganization** in the traditional sense. Unlike traditional databases where data becomes fragmented over time, Snowflake automatically manages its internal data storage and avoids fragmentation. This is due to its unique architecture consisting of:

**Columnar storage:** Data is stored by column instead of row, minimizing wasted space for unused columns.

**Micro-partitions:** Data is divided into small, self-contained chunks called micro-partitions, allowing efficient access and updates without affecting the entire table.

**Automatic data reorganization:** Snowflake automatically compresses and re-organizes data within micro-partitions to optimize storage and query performance.

**Clustering:** You can optionally cluster data based on frequently used columns for faster queries, but this doesn't involve manual reorganization.

While Snowflake takes care of automatic reorganization, there are certain situations where you might consider alternative approaches:

**Clustering:** Clustered tables may need occasional re-clustering if the data distribution changes significantly over time. However, Snowflake automates this process as well, unless you choose manual controls.

**Time Travel and Fail-safe:** These features keep historical versions of data for recovery purposes. This can lead to data fragmentation, but Snowflake manages this internally and doesn't require user intervention.

**Large data migrations:** When importing large datasets, consider using external stages or COPY commands with clustering options to optimize initial data placement.

**Performance tuning:** In rare cases, analyzing query performance might reveal specific data skew or distribution issues that could benefit from alternative clustering strategies. However, this usually requires advanced understanding and careful evaluation.

In summary, Snowflake excels at automatic data management, so manual table space reorganization is generally not required or recommended. However, understanding the underlying concepts and available options helps you optimize performance and storage for your specific use cases.

---

Whether you need a **dedicated DBA and architect for your Snowflake database** depends on several factors, including:

#### Complexity of your data and workloads:

- **Simple setup:** For a basic Snowflake setup with low-complexity data and workloads, one person with strong DBA skills and familiarity with Snowflake's architecture might be sufficient.
- **Complex setup:** If your data is diverse, your workloads are demanding, or you plan significant scaling, having separate DBA and architect roles can be beneficial. The DBA can handle day-to-day operations and security, while the architect focuses on long-term strategy, performance optimization, and scalability.

#### Your team's expertise:

- **Existing expertise:** If your team already has strong data architecture and administration skills, you might not need dedicated roles. But training or upskilling on Snowflake specifics is crucial.
- **Limited expertise:** If your team lacks experience with Snowflake or data architecture, separate DBA and architect roles can provide crucial expertise.

#### Budget considerations:

- **Cost:** Hiring two specialists adds cost, while a single role is more economical. However, consider the potential long-term savings from efficient data management and architecture planning.

Here's a breakdown of the potential benefits of each approach:

Single DBA with Snowflake skills:

- **Cost-effective:** Requires hiring only one person.
- **Streamlined workflows:** One point of contact for all database needs.
- **Potentially less efficient:** Balancing diverse responsibilities might impact quality.

Separate DBA and architect:

- **Deep expertise:** Each role brings specialized knowledge and focus.
- **Optimized performance:** Architect can guide strategy and scalability.
- **Increased cost:** Requires hiring two individuals.
- **Potential communication overhead:** Coordination between roles is essential.

Ultimately, the best approach depends on your specific needs and resources. Carefully evaluate your data complexity, team expertise, budget constraints, and long-term goals before making a decision.

Here are some additional resources that might be helpful:

- **Snowflake's Data Architect resources:** <https://www.snowflake.com/trending/data-architects/>
- **Snowflake's DBA resources:** <https://community.snowflake.com/s/snowflake-administration>
- **Blog post "Reduce Your DBAs' Burden with Snowflake":** <https://community.snowflake.com/s/article/Reduce-Your-DBAs-Burden-with-Snowflake>

I hope this information helps you make an informed decision!

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**Snowflake DBAs are responsible** to ensure the smooth operation, security, and performance of Snowflake-based data platforms. Key responsibilities:

1. Account and User Management
2. Security and Compliance
3. Performance Optimization

- 4. Data Management
- 5. Backup and Recovery
- 6. Cost Management
- 7. Automation and Scripting
- 8. Collaboration and Support

++++++  
**Snowflake architects** are responsible for designing, implementing, and maintaining efficient and secure Snowflake data platform. Their responsibilities encompass a wide range, typically falling into three main categories: **Architecture, Implementation, and Optimization.**

#### Architecture

- Data Strategy
- Data Modeling
- Security Design
- Optimize storage, compute, and cost efficiency

#### Implementation

- Deployment
- Data Ingestion
- Security Configuration - access controls, user roles, and security settings
- Performance Tuning

#### Optimization

- Monitoring and Reporting
- Scalability Planning
- Technology Updates - Snowflake features and best practices, recommend and upgrades

#### Additional responsibilities:

- Collaborate with data engineers, data analysts, and other stakeholders for smooth data flow and utilization
- Provide ongoing support and training to users
- Be aware of industry trends and advancements in cloud data warehousing technologies

++++++  
**Snowflake doesn't require database refresh.** However, depending on your use case, databases within Snowflake might need refreshing in different scenarios:

#### Replicating databases:

- If you need to have a secondary copy of your database for disaster recovery or geographical availability, you can set up **replication**
- You can define the desired refresh interval based on your needs

#### Dynamic tables:

- Snowflake **dynamic tables** automatically refresh based on changes in other table
- You can define a target lag time for dynamic tables

#### Other use cases:

- You might need to refresh external tables if the underlying data source changes
- Manually refresh a table for specific reasons, such as, after data loading or cleaning

++++++  
**Snowflake tables don't require manual table space reorganization.** Snowflake automatically manages its internal data storage and avoids fragmentation due to its unique architecture comprised of:

**Columnar storage:** minimize wasted space for unused columns

**Micro-partitions:** allows efficient access and updates without affecting the entire table

**Automatic data reorganization:** Snowflake automatically compresses and re-organizes data within micro-partitions to optimize storage and query performance.

**Clustering:** You can optionally cluster data based on frequently used columns for faster queries, but this doesn't involve manual reorganization.

While Snowflake takes care of automatic reorganization, there are certain situations where you might consider alternative approaches:

**Clustering:** Clustered tables may need occasional re-clustering if the data distribution changes significantly over time. However, Snowflake automates this process as well, unless you choose manual controls.

**Time Travel and Fail-safe:** These features keep historical versions of data for recovery purposes. This can lead to data fragmentation, but Snowflake manages this internally and doesn't require user intervention.

**Large data migrations:** When importing large datasets, consider using external stages or COPY commands with clustering options to optimize initial data placement.

**Performance tuning:** In rare cases, analyzing query performance might reveal specific data skew or distribution issues that could benefit from alternative clustering strategies. However, this usually requires advanced understanding and careful evaluation.

## Items to do

Thursday, February 15, 2024 1:13 PM

1. introduce Santosh to David Maharjan - sent a message to David M. on 2/15/2024 asking for his help. He declined, citing being too busy.
2. Action item: Cheema, Dave Dave, can you meet with the HCP team that supports this tooling and get an understanding of what limits they are placing on the tool versus what it can truly do?

Qlik is needed for data replication, cost and chargeback

Toaster2010!

HCP - Health care platform

<https://hcp.uhg.com/>

28 hrs into project

6 hrs. Training Program management & development

6 hrs. Practice development

\*\*\*\*\*  
John Shin - FYI – please make sure we prepare a doc for Snowflake monitoring as well  
\*\*\*\*\*

1. Syncsort DMExpress conversion --> no meaningful tool available
  2. Snowconvert --> seems limited, won't be helpful in DMExpress conversion. Reach out to Verma or Steve S
  3. DDL Generation --> met with Vadim Roytman --> no permissions to generate DDLs using SQLPLUS --> no chance of getting it either.  
Now two choices: a. send lists of schemas/tables to AppDBAs and they will generate for us; b. do it ourselves using DBeaver.  
Our recommendation will be to do the DDL generation ourselves for more flexibility.  
Then work with Sandeep and Gaurav to test/PoC data load into test tables
  4. CDC on-prem data load to Snowflake - best option seems to be Informatica PowerCenter using Informatica PowerCenter Snowflake Connector. Besides, Ranjith has already tested this option. Look into volume.
  5. To create virtual warehouses, I met with Jeff Evans, Rajesh Nair and David Pena to ensure proper naming conventions and standards and recommendations are followed. They pointed me to Sheharyar, since he has already created some warehouses. So I have setup a meeting with him to plan for the virtual warehouses
- \*\*\*\*\*

**CodeXchange Contacts:** [@Venkateshwaran, Anand](#) and [@Das, Sandeep C](#)

[5:02 PM] Shin, John S

Hi Dave, Dinesh would like to see how much of the SMART code base can be converted using our internal conversion tool (CodeXchange). Please reach out and talk through what we need done and get that understood.

[SMART Codebase Inventory.xlsx](#)



SMART  
Codebase...

[5:02 PM] Shin, John S

feel free to include me on any calls you setup

# Packages Installed on New Server

Monday, April 29, 2024 5:03 PM

Hi Dave—

Requested packages are installed on rn000111229

| Package                    | Version                   |
|----------------------------|---------------------------|
| asn1crypto                 | 1.5.1                     |
| certifi                    | 2024.2.2                  |
| cffi                       | 1.16.0                    |
| charset-normalizer         | 3.3.2                     |
| cryptography               | 42.0.5                    |
| cx-Oracle                  | 8.3.0                     |
| filelock                   | 3.14.0                    |
| future                     | 1.0.0                     |
| ibm-db                     | 3.2.3                     |
| idna                       | 3.7                       |
| numpy                      | 1.24.4                    |
| packaging                  | 24.0                      |
| pandas                     | 2.0.3                     |
| pip                        | 19.3.1                    |
| platformdirs               | 4.2.1                     |
| pycparser                  | 2.22                      |
| PyHive                     | 0.7.0                     |
| PyJWT                      | 2.8.0                     |
| pyOpenSSL                  | 24.1.0                    |
| python-dateutil            | 2.9.0.post0               |
| pytz                       | 2024.1                    |
| PyYAML                     | 6.0.1                     |
| requests                   | 2.31.0                    |
| setuptools                 | 41.6.0                    |
| six                        | 1.16.0                    |
| snowflake-connector-python | 3.9.1                     |
| sortedcontainers           | 2.4.0                     |
| tomlkit                    | 0.12.4                    |
| typing-extensions          | 4.11.0                    |
| tzdata                     | 2024.1                    |
| urllib3                    | 1.26.18                   |
| eim_np                     | @rn000111229:/home/eim_np |

Regards,  
Sree

# Qlik

Thursday, February 15, 2024 7:55 PM

## Qlik Replicate (on-prem)

Capability Owner - Nicholas Dau  
Nicholas W Dau (VP Data Analytics)  
Environment: On-Prem  
PADU: Acceptable  
License: Not Open Source  
<https://hcp.uhg.com/>

Qlik Sense is no longer available

## Activities

On 2/15/2024

Reached out to Nicholas, Dean, and Gaurav about any information they could provide  
Did a lot of searching on HCP platform, but found nothing

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[Yesterday 7:42 PM] Cheema, Dave

Nicholas, my name is Dave Cheema and I'm from the Optum Advisory Services, reporting to Dinesh Malhotra. The reason of my contacting you is Qlik. I got your name from the PADU list. Are you the right person that we can speak to about it? If not, do you know who might be? We're working on a large project for the MRIS group. We were interested in exploring whether we can use this tool for the CDC and data replications. If we can a quick chat with you regarding its capabilities, nuances, experiences, pricing/rates, and any thing else we can learn, will be greatly appreciated. Thanks in advance. Regards, Dave Cheema

[6:58 AM] Dau, Nicholas W

Hi Dave - I manage 100's of technologies in the data management capability. In most cases I'm just chasing down owners/stakeholders within various tech organizations to ensure we have accurate representation. My team does own/manage a portion of that tech directly but Qlik is not one of them. It is leveraged in many areas for CDC but I believe we've been having a material issue negotiating with the vendor. ES&P has not been happy with them as of late but they are still an approved option for CDC. I would recommend reaching out to Aaron Strey. His engineering team owns one of the largest implementations. He'd be able to share his experience and the details you're looking for.

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[9:10 AM] Cheema, Dave

Aaron, my name is Dave Cheema and I'm from the Optum Advisory Services, reporting to Dinesh Malhotra. The reason of my contacting you is Qlik. I got your name from Nicholas Dau. Are you the right person that we can speak to about it? If not, do you know who might be? We're working on a large project for the MRIS group. We were interested in exploring whether we can use this tool for the CDC and data replications. If we can a quick chat with you regarding its capabilities, nuances, experiences, pricing/rates, and any thing else we can learn, will be greatly appreciated. Thanks in advance. Regards, Dave Cheema

[9:14 AM] Strey, Aaron D

Yes  
my team supports Qlik  
<https://hcp.uhg.com/products/ChangeDataCapture>  
docs are there  
you can reach out to **Will McGee** on my team for any questions  
he manages the Qlik platform

+++++

[9:51 AM] McGee, Will

I am the right contact, my team is the main user of Qlik in Optum as it is the underlying tool for our Change Data Capture platform (CDC). We might want to take a call on this because there is a bit to unpack.

The short response is that Qlik is going away as an acceptable vendor to work with, so our team along with any other users of Qlik tools at Optum are being tasked to look at other options. Debezium is a good alternative that we are exploring that is also open source, with Oracle Golden Gate being another good, on-prem option, though likely costing a bit more due to being Oracle.

+++++

Sources:

<https://docs.hcp.uhg.com/change-data-capture/sources>

Direct to GCP:

<https://docs.hcp.uhg.com/change-data-capture/gcp>

Snowflake:

<https://docs.hcp.uhg.com/change-data-capture/target-snowflake>

Cost Model:

<https://docs.hcp.uhg.com/change-data-capture/costs>

+++++

Kafka Docs:

<https://docs.hcp.uhg.com/kafka/kafka-on-public-cloud> (this is Kafka on the cloud docs, they have other offerings but this is the one you'd want)

Steve Min is the manager for the Kafka team, likely a good name. They also have a public channel which is linked in their docs under "Useful Links". If you need the CDC public channel or Hive to post general questions, CDC's links are in the same spot in our docs.

I could not find any specific reasoning why FiveTran was not included. I recall something being said, but no one on my team remembers specifically and the person who did the review work is on PTO this week, so nothing to add there today.

Lastly, talked with my leader a little on the Snowflake ask in a 1-1 we had scheduled already and based on the chat, I don't think directly writing to Snowflake is something we'd explore. We are still open to have a follow-up chat if you'd like to hear more on our reasonings for this and have our product leader hear your needs, but I want to be clear now that it is rather unlikely to avoid going through Kafka first.

+++++

# Setting up Virtual Warehouses

Monday, February 19, 2024 7:22 PM

[https://docs.hcp.uhg.com/strategic-data-repository-platform-\(sdrp\)](https://docs.hcp.uhg.com/strategic-data-repository-platform-(sdrp))

Secure Roles

Vitual warehouse names

If the pull request had a comment stating no new roles were found, then see setup process for the next step

If a Role Sync issue was created, follow these steps:

To create a Secure role file, follow these instructions in the section create a secure role file

To submit a Secure role request, follow these instructions in the section submit a secure role request

Once the Secure role request is complete you need to close the Role Sync issue, follow these instructions in the section closing your role sync issue

Download the SDRP\_SF\_Roles\_for\_Secure\_TEMPLATE.xlsx from sdrp-tenant

On your machine navigate to the file location {tenant\_folder}\{env}\auto-gen\auto\_gen\_secure\_roles.csv

Review the file to make sure everything looks good

Submit a Secure Role Request

Go to Service Now to submit a request to create the roles.

Enter the following in the search box.image.png

Click on the yellow highlighted option at the top.image.png

Select the following value.image.png

Use the following guide to populate the request for new roles.

Alternate Contact: Alternate people to be notified

Recipient: Person on your team owning the groups

Select the type: Application

Select the application/database name that requires an update: DWaaS - Data Warehousing as a Service

Select the environment: Select appropriate value

Select the type of role change: Add new role

Provide the new role name: Template attached

Provide the role description: Template attached

Select a category: Select your groups category

If this is the first time select: Not Listed

Provide the category name: User friendly name, include your teams prefix. This is the grouping that users will look under for their roles in Secure.

Provide the category description: Description of category

Is this role already setup within the application or database?: No

When will this role be setup within the application or database?: Select a date

Who will be setting up the role within the application or database?: Name of person requesting/validating the changes

Does the Corporate Directory group already exist?: Yes

Select the directory: Active Directory

Provide the group name: Template attached

Provide the domain: MS Domain

Select the Time Based Access setting for the role in Secure: Permanent Access

Select the primary Role Approver(s) you would like to add: Select the appropriate names. Note these should match the values in the auto\_gen\_secure\_roles.csv

Note you can add multiple people in the box

Select the backup Role Approver(s) you would like to add: Select the appropriate names. Note these should match the values in the auto\_gen\_secure\_roles.csv

Note you can add multiple people in the box

Provide any additional information the administrator may need to process request: Add additional information if needed

Provide a business justification for this request: Enter justification

Comments:

Provide a brief summary for your request: New roles for \<prefix\>\<env\>

Attache the Excel file to the request

Submit your request

Once RITM request submitted, update Role sync issue with RITM Request number by commenting on the issue.

Virtual warehouses and roles

# Connection Settings for DEEP Warehouse

Friday, February 23, 2024 4:03 PM

Hi Everyone. This is with respect to Data Procurement.

DEEP access has to be made through Secure by following the SharePoint link given at the end of the DEEP access requirement document. While requesting please select the following:

1. **Application:** DEEP - Data Science Enablement Platform
2. **Environment:** Non-Prod
3. **Role:** DEEP Data Governance Read Access (\*\*Only this role to be selected)
4. Please provide DUR 183 at the end

Please use below info to connect to hosts through DBeaver/WinSCP:

## DEEP Non-prod

**Servers :** rn000069935, rn000057786

**Connection string :** jdbc:hive2://rn000069935:10195, jdbc:hive2://rn000057786:10195

**Scripts for Ingestion Jobs:** /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts/deep\_ingestion\_jobs/

**Scripts for Non-prod processes:** /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts/deep\_processes

**Scripts for Non-prod utilities:** /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_scripts/deep\_utils

**Path for Hive DataWarehouse:** /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/hive/warehouse/

**ECG landing path:** /mapr/datalake/optum/optuminsight/d\_dlz/ism/hive\_sqauth/dev/d\_landing/inbox/deep\_prod\_inbox

## Costs

Friday, March 8, 2024 8:36 PM

[1:20 PM] Shin, John S

Hi Sandeep. Does this look like a holistic listing of cloud components for MRIS from that invoice? I deleted lines from Kiran's email that didn't seem to belong.  
[https://uhgazure.sharepoint.com/:x/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/Invoice%20Line%20Items%20for%20MRIS%20Cloud%20Components.xlsx?d=wf32d3553e14b48f695334af003703321&csf=1&web=1&e=cil\\_YQz](https://uhgazure.sharepoint.com/:x/r/teams/OAS-MRIS2024ModernizationProgram/Shared%20Documents/General/Invoice%20Line%20Items%20for%20MRIS%20Cloud%20Components.xlsx?d=wf32d3553e14b48f695334af003703321&csf=1&web=1&e=cil_YQz)  
 Invoice Line Items for MRIS Cloud Components.xlsx

From: Sandeep Palla

Thanks Kiran.

Below windows servers highlighted are used for Azure SHIR.

Thanks  
Sandeep

**From:** Padgaonkar, Kiran <[KPadgaonkar@uhc.com](mailto:KPadgaonkar@uhc.com)>

**Sent:** Friday, March 8, 2024 9:36 AM

**To:** Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>; Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>; Palla, Sandeep <[sandeep.palla@optum.com](mailto:sandeep.palla@optum.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>

**Cc:** Palmer, Michael M <[mpalmer@uhc.com](mailto:mpalmer@uhc.com)>; Gulraiz, Sheharyar <[sheharyar\\_gulraiz@uhc.com](mailto:sheharyar_gulraiz@uhc.com)>

**Subject:** RE: EDP chargebacks for Feb

Does this help?

| LONG APP NAME                                        | SERVICE DESCRIPTION       | CS SERVICE VIRTUAL | CS SUI DESCRIPTION                                               | Sum of ACT JAN | Sum of ACT FEB |
|------------------------------------------------------|---------------------------|--------------------|------------------------------------------------------------------|----------------|----------------|
| Insurance Solution Enterprise Data Platform (IS-EDP) | <b>BDPaaS Compute</b>     |                    |                                                                  | 14251.88       | 14251.88       |
|                                                      | <b>BDPaaS Storage</b>     |                    |                                                                  | 4584.776       | 4584.776       |
|                                                      | <b>Container Platform</b> | elr-prd-usr001     | ns-jenkins-edp-dlz                                               | 61.0916        | 60.4           |
|                                                      | <b>ECG</b>                |                    |                                                                  | 578.55         | 578.55         |
|                                                      | <b>Job Control</b>        | JobScheduling      | IS-EDP Insurance Solution Enterprise Data Platform               | 1999.14        | 2002           |
|                                                      | <b>MySQL Database</b>     |                    |                                                                  | 84.816         | 83.448         |
|                                                      | <b>ODI CPU</b>            | blank              | rp000114471                                                      | 47.616         | 0              |
|                                                      |                           |                    | <b>wn000134385</b>                                               | 23.808         | 0              |
|                                                      |                           | RN000057812        | rn000057812                                                      | 190.464        | 188.928        |
|                                                      |                           | rn000096647        | rn000096647                                                      | 47.616         | 46.656         |
|                                                      |                           | rn000098160        | rn000098160                                                      | 47.616         | 47.232         |
|                                                      |                           | rn000099289        | rn000099289                                                      | 47.616         | 46.656         |
|                                                      |                           | rn000104409        | rn000104409                                                      | 47.616         | 47.232         |
|                                                      |                           | rn000112671        | rn000112671                                                      | 47.616         | 47.232         |
|                                                      |                           | RP000062313        | rp000062313                                                      | 190.464        | 188.928        |
|                                                      |                           | rp000104025        | rp000104025                                                      | 47.616         | 47.232         |
|                                                      |                           | rp000114471        | rp000114471                                                      | 0              | 47.232         |
|                                                      |                           | WN000134385        | <b>wn000134385</b>                                               | 0              | 23.616         |
|                                                      |                           | wn000140266        | <b>wn000140266</b>                                               | 18.944         | 47.232         |
|                                                      |                           | wp000140760        | <b>wp000140760</b>                                               | 9.856          | 47.232         |
|                                                      | <b>ODI RAM</b>            | apvrp58691         | apvrp58691                                                       | 0              | 0              |
|                                                      |                           | blank              | rp000114471                                                      | 29.76          | 0              |
|                                                      |                           |                    | <b>wn000134385</b>                                               | 14.88          | 0              |
|                                                      |                           | RN000057812        | rn000057812                                                      | 238.08         | 236.16         |
|                                                      |                           | rn000096647        | rn000096647                                                      | 14.88          | 14.58          |
|                                                      |                           | rn000098160        | rn000098160                                                      | 29.76          | 29.52          |
|                                                      |                           | rn000099289        | rn000099289                                                      | 14.88          | 14.58          |
|                                                      |                           | rn000104409        | rn000104409                                                      | 29.76          | 29.52          |
|                                                      |                           | rn000112671        | rn000112671                                                      | 29.76          | 29.52          |
|                                                      |                           | RP000062313        | rp000062313                                                      | 238.08         | 236.16         |
|                                                      |                           | rp000104025        | rp000104025                                                      | 14.88          | 14.76          |
|                                                      |                           | rp000114471        | rp000114471                                                      | 0              | 29.52          |
|                                                      |                           | WN000134385        | <b>wn000134385</b>                                               | 0              | 14.76          |
|                                                      |                           | wn000140266        | <b>wn000140266</b>                                               | 11.84          | 29.52          |
|                                                      |                           | wp000140760        | <b>wp000140760</b>                                               | 6.16           | 29.52          |
|                                                      | <b>Public Cloud</b>       | blank              | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Azure_Data_Factory_v2:1 | 0              | 43.763         |
|                                                      |                           |                    | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Azure_Monitor:1         | 0              | 0.6955         |
|                                                      |                           |                    | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Bandwidth:1             | 0              | 0.214          |
|                                                      |                           |                    | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Event_Hubs:1            | 0              | 31.351         |
|                                                      |                           |                    | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Functions:1             | 0              | 0.1712         |
|                                                      |                           |                    | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Key_Vault:1             | 0              | 0.0642         |

|                                    |             |                                                              |                                                                        |            |            |
|------------------------------------|-------------|--------------------------------------------------------------|------------------------------------------------------------------------|------------|------------|
|                                    |             |                                                              | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Log_Analytics:1               | 0          | 0.2033     |
|                                    |             |                                                              | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Service_Bus:1                 | 0          | 5.2751     |
|                                    |             |                                                              | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Storage:1                     | 0          | 321.2568   |
|                                    |             |                                                              | AZU:3d58a242-5793-4087-947a-0ca97fbe8fb6:Virtual_Network:1             | 0          | 15.0763    |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Azure_Data_Factory_v2:1        | 101.5109   | 335.0705   |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Azure_Monitor:1                | 1.0058     | 1.0379     |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Bandwidth:1                    | 0.0107     | 0.0535     |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Event_Grid:1                   | 0          | 0.0321     |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Event_Hubs:1                   | 45.1433    | 45.1433    |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Functions:1                    | 0.214      | 0.214      |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Key_Vault:1                    | 0.1391     | 0.1498     |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Log_Analytics:1                | 0.1819     | 0.321      |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Microsoft_Defender_for_Cloud:1 | 0.6313     | 1.9902     |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Service_Bus:1                  | 5.9278     | 7.4151     |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Storage:1                      | 372.5633   | 329.2497   |
|                                    |             |                                                              | AZU:df5fbe1-ac66-4549-a170-1a3bbb27a6bf:Virtual_Network:1              | 38.3916    | 50.1616    |
|                                    |             | uhc-mris/lfdc:Actions                                        |                                                                        | 1.4237     | 7.918      |
|                                    |             | uhc-mris/lfdc:Shared Storage                                 |                                                                        | 0          | 5.0932     |
|                                    |             | uhc-mris/lfdc-platform:Actions                               |                                                                        | 0.1996     | 0          |
|                                    |             | uhc-mris/lfdc-platform:Shared Storage                        |                                                                        | 0.0135     | 5.0718     |
| Storage - Archive                  | NASV005     | NEARSTORE_NASV005_ESC_587900_1865097                         |                                                                        | 0.6105     | 0.6105     |
|                                    | NASV0201    | NEARSTORE_NASV0201_ESC_606917_1923441                        |                                                                        | 1.1063     | 1.0841     |
|                                    | NASV0205    | NEARSTORE_NASV0205_ESC_568726_1804195                        |                                                                        | 1.5318     | 1.5318     |
| Storage - Backup                   | RN000057812 | NetBackup_RN000057812                                        |                                                                        | 0.8362     | 0.8843     |
|                                    | RP000062313 | NetBackup_RP000062313                                        |                                                                        | 0.6845     | 1.3283     |
| Storage - High Performance         | WN000134385 | NetBackup_WN000134385                                        |                                                                        | 0.4921     | 0.4403     |
|                                    | apvrp58691  | apvrp58691                                                   |                                                                        | 47.6949    | 47.6949    |
|                                    | blank       | rp000114471                                                  |                                                                        | 14.4188    | 0          |
|                                    |             | wn000134385                                                  |                                                                        | 40.0499    | 0          |
|                                    | RN000057812 | rn000057812                                                  |                                                                        | 106.9343   | 106.9343   |
|                                    | rn000096647 | rn000096647                                                  |                                                                        | 26.7388    | 26.7388    |
|                                    | rn000098160 | rn000098160                                                  |                                                                        | 14.6432    | 14.6432    |
|                                    | rn000099289 | rn000099289                                                  |                                                                        | 26.7388    | 26.7388    |
|                                    | rn000104409 | rn000104409                                                  |                                                                        | 14.421     | 14.4221    |
|                                    | rn000112671 | rn000112671                                                  |                                                                        | 14.4221    | 14.4221    |
| Storage - Object                   | RP000062313 | rp000062313                                                  |                                                                        | 120.5732   | 91.9732    |
|                                    | rp000104025 | rp000104025                                                  |                                                                        | 26.7388    | 26.7388    |
|                                    | rp000114471 | rp000114471                                                  |                                                                        | 0          | 14.4188    |
|                                    | WN000134385 | wn000134385                                                  |                                                                        | 0          | 40.0499    |
|                                    | wn000140266 | wn000140266                                                  |                                                                        | 58.0888    | 58.0899    |
|                                    | wp000140760 | wp000140760                                                  |                                                                        | 58.0888    | 58.0899    |
|                                    | blank       | sapi-15929040497331                                          |                                                                        | 0.0148     | 0.0155     |
|                                    |             | sapi-15929640973620                                          |                                                                        | 6.7584     | 7.225      |
|                                    |             | sapi-16291488249341                                          |                                                                        | 24.6376    | 27.632     |
|                                    |             | sapi-16567207908407                                          |                                                                        | 0.3733     | 0.3989     |
| Storage - Standard Performance     |             | sapi-16633619879038                                          |                                                                        | 0.2586     | 0.2938     |
|                                    | NASV0050    | NAS_PRIMARY_NASV0050:/ESC_502158_1618397/UHCMRIS_EDP_LANDING |                                                                        | 3.7        | 3.7        |
|                                    | NASV0055    | NAS_PRIMARY_NASV0055:/ESC_587900_1865097/EDP_LANDING_STG     |                                                                        | 14.8       | 14.8       |
|                                    | NASV0201    | NAS_PRIMARY_NASV0201:/ESC_606917_1923441/EDP_LANDING_PROD    |                                                                        | 14.8       | 14.8       |
|                                    | NASV0203    | NAS_PRIMARY_NASV0203:/ESC_553286_1760730/EDP_LANDING_DEV     |                                                                        | 14.8       | 14.8       |
|                                    | NASV0205    | NAS_PRIMARY_NASV0205:/ESC_568726_1804195/EDP_LANDING_TST     |                                                                        | 14.8       | 14.8       |
|                                    |             | NAS_PRIMARY_NASV0205:/ESC_718298_2286559/MRIS_TDM_NAS        |                                                                        | 14.8       | 14.8       |
| Strategic Data Repository Platform | Unknown     | Requesting New Tenant for Enterprise Data Platform (EDP)     |                                                                        | 298.5018   | 2056.4858  |
|                                    |             |                                                              |                                                                        | 24550.2354 | 27018.1591 |

From: Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>

Sent: Thursday, March 7, 2024 5:37 PM

To: Ubele, Douglas J <[douglas.j.ubele@uhc.com](mailto:douglas.j.ubele@uhc.com)>; Padgaonkar, Kiran <[KPadgaonkar@uhc.com](mailto:KPadgaonkar@uhc.com)>; Palla, Sandeep <[sandeep.palla@optum.com](mailto:sandeep.palla@optum.com)>; Cheema, Dave <[dave.cheema@optum.com](mailto:dave.cheema@optum.com)>

**Cc:** Palmer, Michael M <[mpalmer@uhc.com](mailto:mpalmer@uhc.com)>; Gulraiz, Sheharyar <[sheharyar\\_gulraiz@uhc.com](mailto:sheharyar_gulraiz@uhc.com)>  
**Subject:** Re: EDP chargebacks for Feb

That seems complete. The only question I would have is the cost for the on-premises VMs hosting the SHIR component of Azure Data Factory (ADF). Not sure if that falls under Public Cloud or some other category...

@[Cheema, Dave](#) Can you please find out by reaching out to a contact on HCC?

Thanks,

---

**John Shin** (he/him)  
Director Cloud Data Engineering OAS - PTS | Optum

O 1-952-833-7266  
M 1-612-321-6400  
[john.shin@optum.com](mailto:john.shin@optum.com)

12125 Technology Drive  
Eden Prairie, MN 55344

**Optum**

**From:** Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>

**Date:** Thursday, March 7, 2024 at 4:26PM

**To:** Padgaonkar, Kiran <[KPadgaonkar@uhc.com](mailto:KPadgaonkar@uhc.com)>, Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>

**Cc:** Palmer, Michael M <[mpalmer@uhc.com](mailto:mpalmer@uhc.com)>, Gulraiz, Sheharyar <[sheharyar\\_gulraiz@uhc.com](mailto:sheharyar_gulraiz@uhc.com)>

**Subject:** RE: EDP chargebacks for Feb

Am I seeing:

|       |                              |
|-------|------------------------------|
| Cloud | \$1,207                      |
| SDRP  | <u>2,506</u>                 |
| Total | \$3,713 February chargebacks |

Do we know if any other line items below are specific to our Cloud effort?

**From:** Padgaonkar, Kiran <[KPadgaonkar@uhc.com](mailto:KPadgaonkar@uhc.com)>

**Sent:** Thursday, March 7, 2024 3:56 PM

**To:** Ubele, Douglas J <[douglas\\_j\\_ubele@uhc.com](mailto:douglas_j_ubele@uhc.com)>; Shin, John S <[john.shin@optum.com](mailto:john.shin@optum.com)>

**Cc:** Palmer, Michael M <[mpalmer@uhc.com](mailto:mpalmer@uhc.com)>

**Subject:** EDP chargebacks for Feb

| Segment-Application Name-Service Category            | Service                            | Service Description       | Unit of Measure | Rate   | YTD Actuals | Jan Act  | Feb Act  |
|------------------------------------------------------|------------------------------------|---------------------------|-----------------|--------|-------------|----------|----------|
| Insurance Solution Enterprise Data Platform (IS-EDP) |                                    |                           |                 |        | \$51,568    | \$24,550 | \$27,018 |
| App                                                  |                                    |                           |                 |        | \$121       | \$61     | \$60     |
| 1009031                                              | Container Platform                 | Vcore w/ RAM Hardcoded    |                 | \$0.16 | \$121       | \$61     | \$60     |
| Big Data                                             |                                    |                           |                 |        | \$37,673    | \$18,837 | \$18,837 |
| 1002106                                              | BDPaaS Compute                     | Vcore                     |                 | \$2.83 | \$28,504    | \$14,252 | \$14,252 |
| 1002107                                              | BDPaaS Storage                     | GB                        |                 | \$0.03 | \$9,170     | \$4,585  | \$4,585  |
| Cloud                                                |                                    |                           |                 |        | \$1,774     | \$567    | \$1,207  |
| 2099047                                              | Public Cloud                       | Actuals                   |                 | \$1.07 | \$1,774     | \$567    | \$1,207  |
| Data Trans                                           |                                    |                           |                 |        | \$1,157     | \$579    | \$579    |
| 1008035                                              | ECG                                | ECG Unit                  |                 | \$5.51 | \$1,157     | \$579    | \$579    |
| Database                                             |                                    |                           |                 |        | \$168       | \$85     | \$83     |
| 4002056                                              | MySQL Database                     | CPU HR                    |                 | \$0.02 | \$168       | \$85     | \$83     |
| Intel Srvcs                                          |                                    |                           |                 |        | \$2,973     | \$1,440  | \$1,534  |
| 4009029                                              | ODI RAM                            | Allocated GB RAM per Hour |                 | \$0.01 | \$1,381     | \$673    | \$708    |
| 4009079                                              | ODI CPU                            | CPU HR                    |                 | \$0.03 | \$1,592     | \$767    | \$825    |
| Other                                                |                                    |                           |                 |        | \$2,355     | \$299    | \$2,056  |
| 1002163                                              | Strategic Data Repository Platform | Snowflake Credits         |                 | \$4.99 | \$2,355     | \$299    | \$2,056  |
| Storage                                              |                                    |                           |                 |        | \$1,345     | \$685    | \$660    |
| 1001007                                              | Storage - Archive                  | GB                        |                 | \$0.04 | \$6         | \$3      | \$3      |
| 1001010                                              | Storage - Object                   | GB                        |                 | \$0.04 | \$68        | \$32     | \$36     |
| 1001034                                              | Storage - Backup                   | GB                        |                 | \$0.04 | \$5         | \$2      | \$3      |
| 1001035                                              | Storage - High Performance         | GB                        |                 | \$0.11 | \$1,111     | \$570    | \$541    |
| 1001036                                              | Storage - Standard Performance     | GB                        |                 | \$0.07 | \$155       | \$78     | \$78     |
| z System                                             |                                    |                           |                 |        | \$4,001     | \$1,999  | \$2,002  |
| 1011001                                              | Job Control                        | Job                       |                 | \$2.86 | \$4,001     | \$1,999  | \$2,002  |

**Kiran Padgaonkar**

UnitedHealthcare | Medicare and Retirement | Insurance Solutions  
T: 215-902-8735 | [KPadgaonkar@uhc.com](mailto:KPadgaonkar@uhc.com)



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# SHIR Cost calculations

Thursday, March 7, 2024 9:13 PM

## Components required to carry data migration from on-premise to Azure cloud:

- Azure Data Factory
- Self-hosted Integration Runtime
- Azure VM
- Microsoft Integration Runtime (client)
- Data pipeline

+++++

**SHIR cost is not listed separately.** Instead, its costs will show under:

- on-premise machine
- Data Movement
- Pipeline activities

**SHIR is not listed separately. Instead, it is listed as line items under Azure Data Factory:**

- Azure Managed VNET Pipeline Activity
- Azure Managed VNET Data Movement
- Azure Managed VNET External Pipeline Activity
- Standard Private Endpoint
- Azure Managed VNET Orchestration Activity Run
- Self Hosted Data Movement
- Cloud Orchestration Activity Run
- Self Hosted Orchestration Activity Run
- vCore
- Standard Data Processed - Egress
- Cloud Read Write Operations
- Standard Data Processed - Ingress
- Cloud Monitoring Operations
- Self Hosted Pipeline Activity
- Cloud Pipeline Activity
- Cloud External Pipeline Activity
- Self Hosted External Pipeline Activity

## Factors influencing costs

- **Data Volume:** The amount of data you're migrating significantly impacts costs. Larger datasets require more resources and processing time.
- **Data Complexity:** The structure and format of your data influence migration complexity. Migrating simple, well-structured data is cheaper than complex or unstructured data.
- **VM Configuration:** The size and type of VM you choose for the self-hosted integration runtime affect costs. Larger VMs with more processing power will be more expensive.
- **Migration Duration:** The time it takes to complete the migration translates to VM and Azure Data Factory usage charges.
- **ADF Activities:** The specific activities used within ADF (copying, transforming, etc.) and their execution frequency impact costs.

+++++  
**Pricing for Data Pipeline is calculated based on:**

1. Pipeline orchestration and execution.
2. Data flow execution and debugging.
3. Number of Data Factory operations such as create pipelines and pipeline monitoring.

+++++  
<https://github.com/MicrosoftDocs/azure-docs/blob/main/articles/data-factory/plan-manage-costs.md>  
<https://azure.microsoft.com/en-us/pricing/details/data-factory/data-pipeline/>

| Type                                    | Azure Integration Runtime Price | Azure Managed VNET Integration Runtime Price           | Self-Hosted Integration Runtime Price |
|-----------------------------------------|---------------------------------|--------------------------------------------------------|---------------------------------------|
| Orchestration <sup>1</sup>              | \$1 per 1,000 runs              | \$1 per 1,000 runs                                     | \$1.50 per 1,000 runs                 |
| Data movement Activity <sup>2</sup>     | \$0.25/DIU-hour                 | \$0.25/DIU-hour                                        | \$0.10/hour                           |
| Pipeline Activity <sup>3</sup>          | \$0.005/hour                    | \$1/hour<br>(Up to 50 concurrent pipeline activities)  | \$0.002/hour                          |
| External Pipeline Activity <sup>4</sup> | \$0.00025/hour                  | \$1/hour<br>(Up to 800 concurrent pipeline activities) | \$0.0001/hour                         |

# Components needed

Thursday, March 14, 2024 8:32 PM

- Python
- Cryptography - pip install cryptography
- cx\_Oracle
- pandas
- yaml
- snowflake.connector
- ibm-db 3.2.3: <https://pypi.org/project/ibm-db/>
- PyHive 0.7.0: <https://pypi.org/project/PyHive/>
- Thrift: <https://pypi.org/project/thrift/>
- thrift-sasl 0.4.3: <https://pypi.org/project/thrift-sasl/>
- filesplit 4.0.1: <https://pypi.org/project/filesplit/>
- AZCopy: <https://learn.microsoft.com/en-us/azure/storage/common/storage-use-azcopy-v10#download-azcopy>

# Community

Thursday, March 14, 2024 9:28 PM

[10:46 AM] Palla, Sandeep

[Join the Community - Public Cloud | HCP Docs \(uhg.com\)](#)

[10:46 AM] Palla, Sandeep

\*Note: In order to join these meetings: you will need to join the **Public Cloud Teams Channel**

| Day      | Topic                                             | Time              | Teams                              |
|----------|---------------------------------------------------|-------------------|------------------------------------|
| Monday   | General Cloud Office Hours (US)                   | 3pm-4pm CT        | <a href="#">Join Teams Meeting</a> |
| Tuesday  | Network Perimeter Protection Office Hours (India) | 2:30pm-3:30pm IST | <a href="#">Join Teams Meeting</a> |
| Thursday | Network Perimeter Protection Office Hours (India) | 2:30pm-3:30pm IST | <a href="#">Join Teams Meeting</a> |
| Thursday | Network Perimeter Protection Office Hours (US)    | 2pm-3pm CT        | <a href="#">Join Teams Meeting</a> |

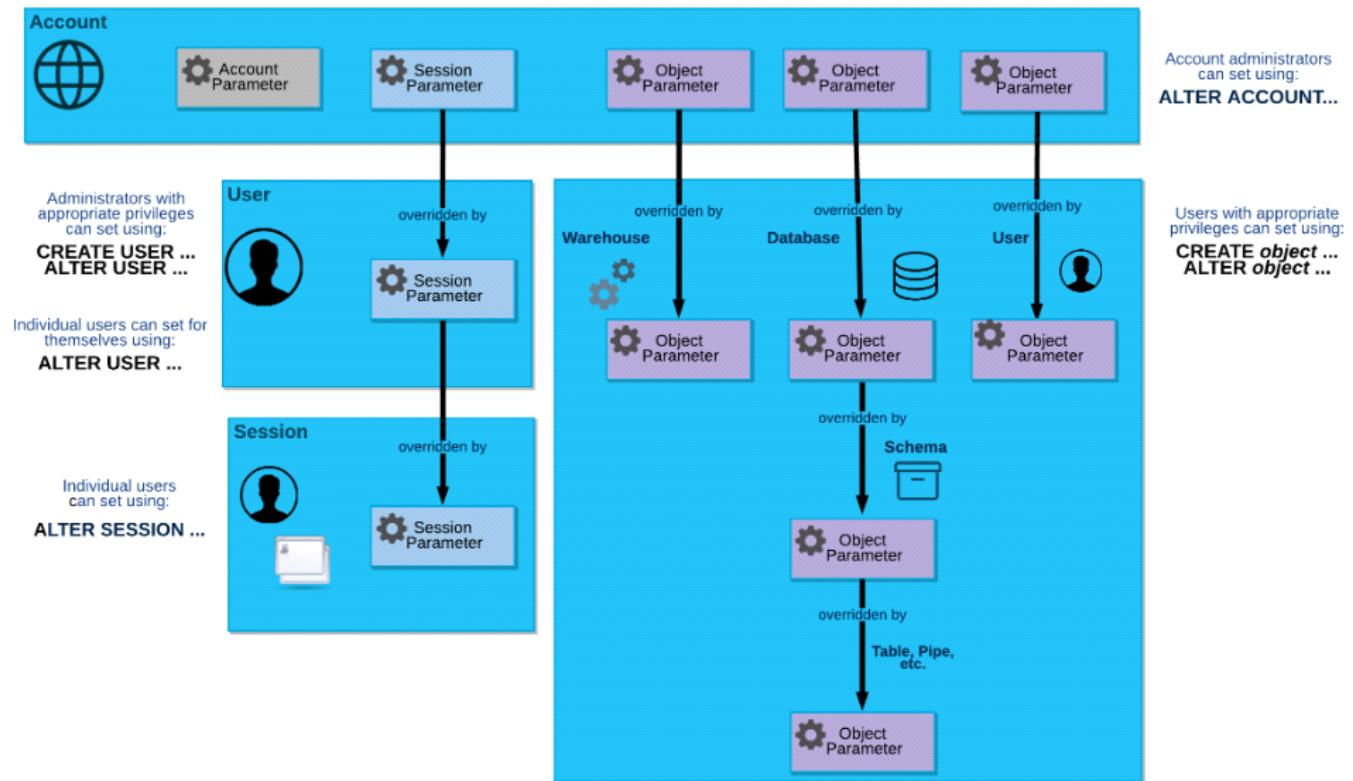
like 2

# Snowflake Kill Long running queries

**SYSTEM\$CANCEL\_ALL\_QUERIES**

SYSTEM\$CANCEL\_QUERY( <query\_id> )

To control the behavior of your **account**, **individual user sessions**, and **objects**: <https://docs.snowflake.com/en/sql-reference/parameters>



# Vulnerabilities

Monday, March 25, 2024 2:47 PM

[2:35 PM] Saripirala, Sreenadha Reddy  
[Security Platform \(optum.com\)](#)

[2:41 PM] Hill, Michael O  
[Launchpad - Public Cloud | HCP Docs \(uhg.com\)](#)

[2:41 PM] Hill, Michael O

## Launchpad Key Features

### Secure and Compliant baseline on Day Zero

Launchpad is automatically applied to accounts as soon as they are created and provisions the necessary dependencies (such as Secure groups, change CIs, and attestations). This enables teams to deploy to non-prod or prod on day zero, needing only to address the gaps created by their additions to the environment.

# MRIS Current Disaster Recovery

Wednesday, May 8, 2024 12:19 PM

## ISDW-ODS

- Has DR table top event annually
- Stand-by node on PROD server MANAGED environment
- Will turn off PROD node and test stand-by is taking over properly
- Back-up of data happens with couple Hours delay
- Primary is Elk River and Secondary is Chaska
- RTO = 8 hours (time to get back up)
- RPO = 1 hour (data loss)

## SMART

- STAGE data base is serving as DR
- No replication of data from PROD to STAGE
- Data backups for PROD
  - Every weekend full database back-up
  - Nightly incremental back-up
- SLA: 7-8 hours for recovery of data into STAGE
- Documentation review & update happens annually

## DEEP & EDP

- Sree to follow-up with Amjad (BDPaaS Admin) for details on DR

In general, ISDC would have DR being done consistently for all scope (ISDW-ODS, SMART, DEEP, and EDP). Specifically, functional DR for everything leveraging Snowflake's DR capabilities (<https://docs.snowflake.com/en/user-guide/replication-intro>).

## Next Steps:

- Understanding of current state costs related to DR would be important to capture
- Discussion on timing and related effort of enabling DR for ISDC on Snowflake

## Utilities

Thursday, May 9, 2024 10:41 AM

### DB2 determine table size:

```
select
  char(date(t.stats_time))||'.'||char(time(t.stats_time)) as statstime
 ,substr(t.tabschema,1,8)||'.'||substr(t.tabname,1,24) as tablename
 ,card as rows_per_table
 ,decimal(float(t.npages)/( 1024 / (b.pagesize/1024)),9,2) as used_mb
 ,decimal(float(t.fpages)/( 1024 / (b.pagesize/1024)),9,2) as allocated_mb
from
  syscat.tables t ,syscat.tablespaces b
where t.tbspace=b.tbspace
order by 5 desc with ur
#####
200000658 - 199000659 = 999999
```

# DR Disaster Recovery

Monday, June 17, 2024 12:02 PM

[12:02 PM] Nair, Rajesh G

[Disaster Recovery - Strategic Data Repository Platform \(SDRP\) | HCP Docs \(uhg.com\)](#)

[Snowflake Status - Incident History](#)

# Clickstream

Monday, August 19, 2024 1:04 PM

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### Adobe Analytics Clickstream v1.0 [DP00000090](#)

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|----------------------------------------|--------|------------------------------|-----------------|------------|------------|--------|
| Adobe Clickstream - ...<br>DS00000498  | Active | rg-cstable-prod-6b45025      | v1.0            | 06/06/2024 | 06/06/2025 | ⋮      |
| Centralized Services ...<br>DS00000537 | Active | rg-groupretiree-prod-d3a5f83 | v1.0            | 06/13/2024 | 06/12/2025 | ⋮      |

1

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 Published

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Platform  
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 Blok, Eddie  
 Kudva, Nayana K  
 Madugula, Shruthi  
 Agrawal, Rupali  
 Sinha, Sarita

Technical Owner  
 Chaudhari, Nirmal

Technical Steward  
 Thomas, Subash  
 Chaudhari, Nirmal

Tags