Introductions

Thursday, May 8, 2025 1:00 PM

Elizabeth Chu echu1@wellmed.net
Kathy Taylor kathy.taylor@optum.com
Brian Stevenson bstevenson@wellmed.net
Andrew Meares ameares@wellmed.net
Shannon Cunningham shcunningham@wellmed.net
++

Shin, John S Yesterday 11:43 AM IMPORTANT

JS

Hi Dave. Please take point on the Central Quality opportunity and get support for Venkata as needed. Review materials that were shared and develop a POV on how OAS might be able to provide value on the modernization need.

- Schedule a call with the client team for Tuesday of next week.
- Schedule an internal call with us (OA team) on Monday to review and discuss your POV.

Shin, John S changed the group name to OAS WellMed Central Quality Opportunity.

Notes

Tuesday, May 13, 2025 12:22 PM

John's Feedback

Re: WellMed Central Quality Assessment proposal deck

Shin, John S
To Cheema, Dave; Kalidindi, Venkata
Cc Malhotra, Dinesh
Retention Policy UHGInbox (90 days) Expires 8/11/2025

Reply | Reply All | Forward
Tue 5/13/2025 11:06 AM

Hi Dave,

The left side of the 2nd slide (Our Understanding) should be reflective of the current situation / challenge the client team is facing and not the solution they are looking for. Solution they are looking for would be the right side (Outcomes).

The broader question I have is what is the level of effort needed to do the assessment and what exactly do we need to learn as part of the assessment, which is what would dictate the effort. Do we need 4-weeks and 3 resources or is this smaller in scope and we could do it in shorter time with less resources?

At a high-level, after this assessment, we need to have the future state solution and an estimate of what the effort and timeline to do it. The questions we have to answer to get that defined are what needs to be addressed as part of the assessment. Some questions could be answered by what was shared already – or it may lead to more concise questions.

Right now, other than reference to the client, the content is very generic and (to me) reflective of a broader scope than might be necessary.

Please think through the above and revise accordingly and set up a call to review draft with this group when you are ready. I would expect a review by the end of the week.

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

12125 Technology Drive
Eden Prairie, MN 55344

++

Snowflake Website: https://app.snowflake.com/uhg/uhgdwaas/w5MQz0XWiXS#query

An example of how to simulate triggers in Snowflake: https://estuary.dev/blog/snowflake-triggers/#:~:text=However%2C%20in%20Snowflake%2C%20the%20concept,features%20called%20Streams%20and%20Tasks.

++ ++++

Current state

- Data architecture
- Ingress-egress modes
- **Integration layers (*Integration patterns*)**
- Technology stack
- Gaps/pain points
- **Expectations from modernized solution (*Motivation*)**

Current State Inve...

Assessment Activities categories

- Current State Assessment
- Future State Design
- Roadmap Planning
- Capacity Planning

Key Guidelines

- Get a formal agreement from the client leadership to provide SMEs
- Upfront access to codebase before starting assessment
- Formalize requirements early in the assessment, or as soon as the target solution architecture review is completed
- Keeping the client SMEs strictly within the boundaries of the data requested in the Current State inventory Template (Important)
- Have client SMEs review and provide formal sign-off of the inventory
- To prevent scope creep, OA technical personnel should continuously validate their understanding of current state solution patterns via flowcharts, diagrams, etc.

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

Understand Current State

Understand current data platform capabilities, inbound & outbound integrations, use cases, objects/capabilities requiring red esign & rewrite
Review current state governance model, security model, protection, access controls, data sensitivity, and regulatory complian ces
Integration with WellMed EDW Data Modernization program

Synthesize and Define Future State

Assess current data platform capabilities, use cases, inbound/outbound integrations, governance model, security practices, an d performance metrics
Identify features that not available in the target data platform or require redesign/rewrite
Map current state findings to the “art of the possible” for the future state vision and create a Current State Assessment rep ort

Recommendations and Roadmap

Define and develop blueprint for the future state cloud-based data platform strategy
Cloud Data Migration Approach by data type
Cloud Data Budgetary Estimation Guidelines
Modernization/implementation cost estimates

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

Persona - A persona is a fictional representation of a typical user or customer that embodies the characteristics, behaviors, and motivations of a s pecific group of people.

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

- **Lakebridge**: Code Conversion tool (Formerly known as Blade Bridge Code Converter). Supports conversions for Teradata, SQL Server, Oracle Exadata, IBM DB2, Vertica, Hive SQL, Netezza, Cloudera, Snowflake, Azure Synapse, Amazon Redshift, Google Big Query. Not yet available for Talend conversions.

Emails

Thursday, May 8, 2025 1:12 PM

WellMed SQL95 Snowflake migration documentation

Reply | Reply All | Forward

EC Elizabeth Chu [From OptumCare]

To Shin, John S; Malhotra, Dinesh; Andrew Meares [From OptumCare]; Kalidindi, Venkata; Gaurav Bangale [From OptumCare]; Brian Stevenson [From OptumCare]; Cheema, Dave; Shannon Cunningham [From OptumCare]

Cc Taylor, Kathy

Thu 5/8/2025 11:03 AM

Retention Policy UHGInbox (90 days) Expires 8/6/2025

20250425_SQL95_Schema_Overview.xlsx 294 KB

SQL Server 95 Current Process.pptx 3 MB

Start your reply all with: Thank you! | Received, thank you. | Thank you very much! | Feedback

Attached please find our SQL95 system documentation.

WELLMED

Elizabeth Chu
PMP | CDMP | PMI-ACP | SAFe 6 Agilist
Quality Performance Analytics
WellMed Medical Management, Inc.

echu1@wellmed.net
WellMedHealthCare.com

LEVEL II

++

RE: WellMed SQL95 Snowflake migration documentation

Reply | Reply All | Forward

BS Brian Stevenson [From OptumCare]

To Elizabeth Chu [From OptumCare]; Shin, John S; Malhotra, Dinesh; Andrew Meares [From OptumCare]; Kalidindi, Venkata; Gaurav Bangale [From OptumCare]; Cheema, Dave; Shannon Cunningham [From OptumCare]

Cc Taylor, Kathy

Thu 5/8/2025 11:38 AM

Retention Policy UHGInbox (90 days) Expires 8/6/2025

Start your reply all with: Yes, that is correct. | Yes, it is. | This is a new one. | Feedback

Is your version of Alteryx not Orbit Alteryx? I didn't catch earlier but in follow up noticed the on-premise tag – if that is the case we will need to solution for transitioning Orbit Alteryx or have some other discussion.

WELLMED | Optum

Brian Stevenson
Director Architecture / Enterprise Architect
Optum Health - South Region

O +1 (210) 951 - 3246
M +1 (210) 810 - 5519
bstevenson@wellmed.net
wellmedhealthCare.com

Upcoming
PTO/OOO
May 22 – 26
June 12 - 17

++

RE: WellMed SQL95 Snowflake migration documentation

Elizabeth Chu [From OptumCare]
To Brian Stevenson [From OptumCare]; Shin, John S; Malhotra, Dinesh; Andrew Meares [From OptumCare]; Kalidindi, Venkata; Gaurav Bangale [From OptumCare]; Cheema, Dave; Shannon Cunningham [From OptumCare]
Cc Taylor, Kathy
Retention Policy UHGInbox (90 days) Expires 8/6/2025

Reply | Reply All | Forward
Thu 5/8/2025 11:47 AM

Start your reply all with: Okay, thank you! | Ok, thanks. | That makes sense. Thanks! | Feedback

It is Orbit Alteryx. I think my BA meant we run it both from local desktop and automatically from Alteryx server. We use gallery database connections.

WELLMED

Elizabeth Chu
PMP | CDMP | PMI-ACP | SAFe 6 Agilist
Quality Performance Analytics
WellMed Medical Management, Inc.

echu1@wellmed.net
WellMedHealthCare.com

LEVEL II

++

RE: WellMed SQL95 Snowflake migration documentation

Brian Stevenson [From OptumCare]
To Elizabeth Chu [From OptumCare]; Shin, John S; Malhotra, Dinesh; Andrew Meares [From OptumCare]; Kalidindi, Venkata; Gaurav Bangale [From OptumCare]; Cheema, Dave; Shannon Cunningham [From OptumCare]
Cc Taylor, Kathy
Retention Policy UHGInbox (90 days) Expires 8/7/2025

Reply | Reply All | Forward
Fri 5/9/2025 10:53 AM

Start your reply all with: Sounds good to me. | Ok, sounds good. | Working on it. | Feedback

Ahh, okay – better. I would just represent server. We can capture the CI/CD (Development practices) flow separately which I would like to better understand. How are we doing change management (promotions, approvals, UT, UAT, etc)?

WELLMED | Optum

Brian Stevenson
Director Architecture / Enterprise Architect
Optum Health - South Region

O +1 (210) 951 - 3246
M +1 (210) 810 - 5519
bstevenson@wellmed.net
wellmedhealthCare.com

Upcoming
PTO/OOO
May 22 – 26
June 12 - 17

++

Miscellaneous

Thursday, May 8, 2025 2:38 PM

\++

***Description of Performance Problem (up to 2048 characters):**

Dave is not meeting performance expectations. Specifically, Dave was responsible for executing on a Solution Blueprint assessment project for RAD Treasury. During the project, our direct client received feedback from their customer leader (VP) that Dave was repeatedly asking for the same information in multiple meetings. Input from 1) our client's customer and 2) our client are as follows:

1) Feedback from the Client's Customer is as follows:
* Ineffective Meeting Management: Despite advice to meet with each team individually, set up recurring meetings with mixed teams, leading to confusion and inefficiency. Frequently asked the wrong audience for information, such as discussing PeopleSoft or ePAM with Quantum contacts, causing further confusion and frustration.
* Lack of Retention and Understanding: Dave has failed to document information provided by teams and often does not understand the data sources and systems, leading to repeated requests for the same information.
* Inadequate Data Management: We have data ready for him, but he has not provided a landing site for new data transmissions, hindering our progress.

The above has led to frustration by the client customer teams and a request from them to remove Dave from the project.

2) Feedback from the our direct client
* Way off the mark for a deliverable
* Dave doesn't understand what treasury is doing
* Over-estimated the complexity – these data and reports are not that complex
* Continues to get systems confused
* Quantum coming from People Soft – wrong
* Complexity of things un-related to source data
* Dave didn't scope the work
* Didn't operate as a Director and pushed hard enough to get the source files
* Can't just make assumptions and not get to air-tight scope
* Have made things more embarrassing (for us) to go back to client and ask for the same data again

***Description of applicable Standard/Policy:** (up to 2048 characters)

The Common Language of Leadership (CLL) is a shared vocabulary we use to clearly describe expectations for success, enable an environment where everyone has the opportunity to learn and grow, and help us identify, develop and deploy talent that will drive us toward achieving our mission.

Managing Ambiguity and Uncertainty: Everyone's career will take shape in an environment marked by what has been termed as VUCA (Volatile, Uncertain, Complex and Ambiguous)
a. Maintains focus and performance in times of uncertainty
b. Is resourceful and creative in solving problems that don't have clear solutions or outcomes.
c. Applies tactics to manage personal discomfort with ambiguity

Influencing Others: Influencing as an individual contributor can be a challenging task. Because individual contributors aren't in a position of power, their ability to influence needs to come from presenting facts.
a. Understands the right person or group or audience to influence
b. Does what is needed to get heard
c. Delivers a convincing value proposition including agilely handling tough Q&A

'Description of Performance Problem (up to 2048 characters):

Dave is not meeting performance expectations. Specifically, Dave was responsible for executing on a Solution Blueprint assessment project for RAD Treasury. During the project, our direct client received feedback from their customer leader (VP) that Dave was repeatedly asking for the same information in multiple meetings. Input from 1) our client's customer and 2) our client are as follows:

1) Feedback from the Client's Customer is as follows:
* Ineffective Meeting Management: Despite advice to meet with each team individually, set up recurring meetings with mixed teams, leading to confusion and inefficiency. Frequently asked the wrong audience for information, such as discussing PeopleSoft or ePAM with Quantum contacts, causing further confusion and frustration.
* Lack of Retention and Understanding: Dave has failed to document information provided by teams and often does not

++

Strategic Data Repository Platform (SDRP)

Storage Tenant is an SDRP operational model that provides an opinionated framework for data producers

AIDE ID: AIDE_0088852
Problem Statement: To transition on-premise database servers to a cloud environment, while the maintaining other integration with data sources using ETL and Snowflake tools.
Strategic Alignment: Improve scalability, operational efficiency, performance, and modernize data management to increase Cloud adoption, reduce risk & improve ROI.
Migration Scope:
Re-platform current on-prem SQL server to Snowflake
Total data size ~1TB (to be migrated)
Leverage existing ETL/Alteryx and Snowflake tools
Data Ingestion into SQL server and Retrievals from SQL server are done using Alteryx
Use storage tenancy and SDRP
Future State Annual cost: $ 62,275 USD

++

WellMed Central Quality
SQL95

Objectives:
- Modernize current on-premise data platform in alignment with the broader WellMed EDW data landscape modernization strategy
- Retain current data intake transformations and data retrieval processes built in Alteryx
- Improve scalability, operational efficiency, performance, and modernize data management

Current State
- Current capabilities of the data platform
  - Perform data services for vendor partner integrations
  - Administer incentive programs, Best Year Yet (quality program), Glide Path data (not stored anywhere else)
  - Manage survey programs
  - Orchestration for TCPA
  - Capture campaign data target/outreaches, opt out data, and integration with EPMP
- Complex business logic that must be redesigned/rewritten
  - Consumer facing SQL Agent Jobs must be redesign/rewritten
  - RO Survey is complex. Those tables use SP and SQL Agent jobs
  - Gatekeeping process for getting Max Display Data control/configurations
- Document inbound/outbound integrations with applications, reporting tools and other systems
  - Only interfaces are with Alteryx and the count is ~250
- Which capabilities work well, and which ones could use improvements
  - Challenges with Native data types

Security
- Current governance model, security model, protection and access controls
  - Refer to Security and Privacy slide

- Identification of PII, PHI, or other sensitive data requiring masking or encryption and at which level PII and PHI implemented
    - No tagging in place
    - Affects data retention policy (10 yrs.)
    - Mostly production database
- Regulatory requirements (e.g., HIPAA, GDPR, SOC 2)
    - Document inbound/outbound data

Data Objects

- Estimated total data size: ~1TB
- There are total 11 databases are in scope

Database	Purpose	Move to Snowflal
BYY	Best Year Yet (BYY) program implementation. Tables in this database hold data related to glide path and measure performance.	Y
CFG	Configuration & entity id-name pair table data.	Y
GIP	GIP Gap Incentive Program implementation and history table data.	Y
OPTUM	Used for processing Optum survey data.	Y
ORCHESTRATION	Campaign orchestration target and opt out data. Stores the history of vendor target outreaches and other campaign suppression related data.	Y
PROD_TABLEAU	Production Tableau environment. Appropriate for views feeding data to Tableau.	Y
RO_ORCHESTRATION	Read only database for external analysts within Quality to access Campaign Orchestration data in a secure way. Tables truncated and refreshed automatically from other databases on a cadence.	Y
RO_SURVEY	Read only database for external analysts within Quality to access Off Cycle and Focus Survey data in a secure way. Tables truncated and refreshed automatically from other databases on a cadence.	Y
Survey	Survey database contains Focus Survey and Off Cycle Survey data tables for WellMed only.	Y
Test	Backup copies of Choreograph data tables.	Y
Vendor	Vendor program implementation. Tables in this database will hold data related member gap closures and responses as they relate to vendor programs.	Y

- Are objects (databases, tables, views) in the lists provided to be migrated as-is or will require redesign
    - Most of them will be migrated as-is, except RO_SURVEY - which are views in reality, but are presented as pseudo tables, since views were not allowed
- Document T-SQL features (e.g., triggers, cursors, CLR functions) that may not be supported or need rewriting in Snowflake streams and tasks
    - No restrictions
    - Triggers are used to preserve Audit values such as, insert_user, insert_date\, etc.
        - Columns
          - CFG_VW_CONTROL_ID (PK, bigint, not null)
          - PROGRAM_NAME (varchar(255), not null)
          - VIEW_NAME (varchar(250), not null)
          - MAX_DISPLAY_DATE (date, not null)
          - USER_STORY (varchar(25), not null)
          - INSERT_DATE (datetime, not null)
          - INSERT_USER (varchar(75), not null)
          - UPDATE_DATE (datetime, not null)
          - UPDATE_USER (varchar(75), not null)

          Keys

          Constraints
- Receive samples of SQL Agent Jobs, triggers, and stored procedures
    - WellMed Central Quality SMEs are going to provide samples

Performance

- Identify high-frequency and long-running queries
    - A few large table loads (ODBC), **ODBC very slow**. Config Provider and EPMP tables are affected
        - WellMed Central Quality **architect recommendations**:

          My recommendation here is to get detailed on how Alteryx can access PMMR data in the core (most ports are blocked) and we may need to rethink how you are connecting. (I.E. direct access to port 1433 is blocked, unless you are accessing from desktop which I don't recommend for the reasons you stated for performance)
- Document peak usage times, concurrency, and batch processing jobs
    - Q1 is a high activity period, but no black outs
- Identify performance optimizations that may need redesign in Snowflake
    - None

Costs

- Document SQL Server licensing, hardware, and maintenance costs
    - N/A

Migration

- How will current data be acquired - direct query, flat file, API, etc.
    - No restrictions
- Will it require ECG? If yes, does WellMed already have ECG setup
    - ECG is available, but not required because of Alteryx.

Desired Capabilities

- Data pipeline automation for faster deployments to remedy unreliable data quickly
- WellMed Central Quality shadow learning

Notes

- Leverage existing ETL/Alteryx and Snowflake tools

SQL95 Current Inventory:

Object Type	Count	Comments/Questions
Databases	11	Databases PROD_TABLEAU and Test have no tables
Tables	98	
Largest tables rows	22160532	
Views	21	
Stored procedures	6	
SQL Agent Jobs	16	
Triggers	??	
External SQL Server Connections (ODBC)		
SACOSQL37.pmmr.com/TC	5	
TX750WPPSQL06A.pmmr.com\SQL06	7	
TX750WPPSQL06B.pmmr.com\SQL06	1	
TX750WVPSQL23C.pmmr.com\SQL23	1	
TX750WPPSQL62.pmmr.com\SQL62	1	
TX750WPPSQL104.pmmr.com\SQL104	1	
wp000026343cls.ms.ds.uhc.com	1	

Discuss different source data files?
Trigger count
Challenges with Native data types

++

Assess current data platform **capabilities, use cases, inbound/outbound integrations, governance model, security practices, and performance metrics**

- Perform data services for vendor partner integrations
- Administer incentive programs, Best Year Yet (quality program), Glide Path data (not stored anywhere else)
- Manage survey programs
- Orchestration for TCPA
- Capture campaign data target/outreaches, opt out data, and integrate with EPMP

- Only interfaces are with Alteryx and the count is ~250

Identify **features that not available in the target data platform or require redesign/rewrite**
- Consumer facing SQL Agent Jobs must be redesign/rewritten
- RO Survey is complex. Those tables use SPs and SQL Agent jobs
- Gatekeeping process for getting Max Display Data control/configurations
- Triggers, SQL Agent Jobs
- Challenges with Native data types. For example, different tools handle datetime format differently
- RO_SURVEY - which are views, but are presented as pseudo tables, since views were not allowed
- Stored procedures, triggers, cursors, CLR functions not be supported or need rewriting in Snowflake streams and tasks
- A few large table loads (ODBC), ODBC is very slow

Available **data acquisition options** available for each data source type
- Any available, appropriate option

Data Retention Policy
- 10 years (*production database*)

Desired Features
- Data pipeline automation for faster deployments to remedy unreliable data quickly
- WellMed Central Quality shadow learning

Map **current state findings to the "art of the possible" for the future state vision** and create a Current State Assessment report

Create architecture, ingestion, transformations, Medallion architecture in the Snowflake SDRP platform

++

1. Samples (simple, medium and complex) for SQL Agent Jobs, Interfaces (inbound/Outbound) with Alteryx, Stored procedures, Trigg ers, & CLR functions
   a. Examples have been provided for - Views, Constraints & Trigger, Stored Procedure, and SQL Agent Jobs (WellMed Central Quality Shared Documents)
   b. Constraints & Triggers:
      i. Nearly all tables in the databases: CFG, GIP, OPTUM, ORCHESTRATION, Test, Survey, & Vendor have 4 constraints and trigger. An example of each has been provided

Constraint 1	Constraint 2	Constraint 3	Constraint 4	Trigger
INSERT_DATE	INSERT_USER	UPDATE_DATE	UPDATE_USER	Update constraint 3 and 4

   c. SQL Agent Jobs
      i. SQL Agent Jobs are utilized in three ways:
         1) Backup tables to Athena database
         2) Refresh the read only database tables
         3) Delete extra backups in the Athena database
   d. Stored Procedures
      i. All stored procedures are manually executed to refresh a read-only database. Soon to be wrapped in SQL Agent Jobs to execute the same
2. Data sources for the SQL95 data platform
   a. SQL Server: TX750WVPSQL95.pmmr.com\SQL95
      i. All Databases
   b. SQL Server: TX750WPPSQL06A.pmmr.com\SQL06
      i. BI_Analysis
      ii. EDW_Atomic
      iii. BI_Analysis_Archive
      iv. EDW_Master_Lists
      v. EDW_Processing
      vi. EDW_Reporting
      vii. EDW_Source
   c. SQL Server: TX750WPPSQL06B.pmmr.com\SQL06
      i. EDW_Historical_Partner
   d. SACOSQL37.pmmr.com\TC
      i. Analytics
      ii. Analytics_AppCode
      iii. Analytics_View
      iv. insights_config
      v. insights_reports
   e. TX750WPPSQL104.pmmr.com\SQL104
      i. ePRG_Lite
   f. SQL Server: wp000026343cls.ms.ds.uhc.com
      i. ccs2_ocs_prod_1
   g. Optum NAS Drive
      i. Microsoft Excel
      ii. CSV
      iii. Text Documents
3. How this project fit into the WellMed EDW Data Modernization program
   a. This project is a key component of the WellMed EDW Data Modernization program. It supports the broader enterprise strategy by transitioning from on-prem systems to a cloud-integrated data architecture
4. Current Team Size and the way they're using this data
   a. 19 team members
   b. WellMed Central Quality Prod Data Platform supports and distributes business intelligence content (Reports, dashboards, scorecards, statements, etc.) for HEDIS, CAHPS/HOS/SDOH and other Quality Care related measures for WellMed delegated membership
   c. SQL95 data supports WellMed's ability to achieve 4 STAR Quality goals
   d. An outage could have an impact on executive and market visibility to quality performance measures, however reports could be pulled during the outage from other systems or frozen dashboards could be used
   e. The CQR team members are separated into User-Roles. Roles are created at the database level, allowing various privileges (i.e. read, write, execute). Roles will vary in access and privileges per database
      i. The CQR team can read tables within BI_Analysis and EDW
      ii. Various tables are used to create and validate the CQR database tables
5. Personas being used
   a. Central Quality Reporting Team
   b. Quality Performance Teams, including the Central Quality Reporting team
   c. WellMed Quality stakeholders
   d. Optum Quality stakeholders
   e. Consumers
      i. Primary Care Providers / Clinics

++

++

1 Data Ingestion

- Explain data ingestion pattern(s)?

1. Data Integration Patterns
    a. Describe data integration patterns?
    b. For example -
        a. The REST API from Alteryx run at various times and cadences depending on data source
        b. Some data is pulled at delta level, but the rest is pulled in its entirety
        c. Then data is stored in its Raw (Bronze) form, after which it goes thru refinement, standardization, and some level of aggregation before it is stored in the 'Fit for Purpose' layer

2. Data Combination from Various Sources
    a. Are there any use cases where data is combined from other sources?

3. Aggregations and Transformations
    a. Describe aggregations and transformations to create 'fit-for-purpose' layers, but using pseudo medallion architecture?

4. Loading process to Target
    a. Is SQL95 MS SQL Server the only target data platform for the final data stage?

5. Data Quality Measures
    a. What data quality metrics are used to ensure the validity, accuracy, and timeliness of data?

6. Data Organization
    a. Describe how data is organized?
        a. Three layers of data tables
        b. Data Subject Areas
        c. Additional Notes for Reference

7. Data Consumption
    a. Any other end-consumers than Alteryx, direct queries, Tableau & Viz Tools?
    b. Describe Viz Tools?
    c. Partners/Business partners

8. Delivery Channels and the performance
    a. Any other delivery channels besides direct queries, data visualization tools

9. Technology Stack
    a. Describe technology stack other than Alteryx, ODBC, MS SQL Server, Tableau / PowerBI?

10. Technology stack involved and their interactions
    a. Describe how above-mentioned technologies are interacting with each other?

++

Object Type	Count	Comments/Questions
Databases	**14**	• Total 17. Are **13 or 14 databases in scope?** • Keep same databases or redesign in Snowflake by domain (*recommended*)?
Tables	98	Will they require any ETL?
Largest tables rows	22160532	Is this the current count?
Views	21	Are definitions provided up-to-date?
Stored procedures	6	Could we get access to them or get their copies?
SQL Agent Jobs	16	Detailed list of SQL Agent Jobs
Triggers	??	Detailed list of triggers
Alteryx On-Premise & Server	??	• Understand count, complexity, and details • Which version is it - Alteryx On-Premise Server or Orbit Alteryx • Reach out to external partner for conversion
External SQL Server Connections (ODBC)	17	Identify inbound/outbound interfaces
• SACOSQL37.pmmr.com/TC	5	
• TX750WPPSQL06A.pmmr.com\SQL06	7	
• TX750WPPSQL06B.pmmr.com\SQL06	1	
• TX750WVPSQL23C.pmmr.com\SQL23	1	
• TX750WPPSQL62.pmmr.com\SQL62	1	
• TX750WPPSQL104.pmmr.com\SQL104	1	
• wp000026343cls.ms.ds.uhc.com	1	

Database	Purpose
[illegible]	[illegible]
[illegible]	[illegible]
CFG	[illegible]
CRBackup	DBA usage only, our team has no access
Development	[illegible]
GIP	[illegible]
OPTUM	[illegible]
ORCHESTRATION	[illegible]
PROD_TABLEAU	[illegible]
Production	[illegible]
RO_ORCHESTRATION	[illegible]
RO_SURVEY	[illegible]
[illegible]	DBA usage only, our team has no access
Survey	[illegible]
Test	[illegible]
Tools	DBA usage only, our team has no access
Vendor	[illegible]
Database Count:	17

TABLE_CATALOG	VIEW_NAME	Right_TABLE_CATALOG
CFG	VW_METRIC_RESPONSE_VALUE	CFG
CFG	VW_METRIC_TARGET	CFG
GIP	VW_GIP_MEASURE_PMT_MONTH	GIP
PROD_TABLEAU	VW_PROD_FOCUS_SURVEY_QUESTION_SCORE	PROD_TABLEAU
PROD_TABLEAU	VW_PROD_METRIC_RESPONSE_VALUE	PROD_TABLEAU
PROD_TABLEAU	VW_PROD_METRIC_TARGET	PROD_TABLEAU
PROD_TABLEAU	VW_PROD_WM_OFFCYCLE_SCORE	PROD_TABLEAU
Survey	VW_FOCUS_SURVEY_QUESTION_SCORE	Survey
Survey	VW_PROVIDER_SCORE_HISTORY	Survey
Survey	VW_PSP_2023	Survey
Survey	VW_PSP_2021	Survey
Survey	VW_WM_OFFCYCLE_SCORE	Survey
Vendor	VW_VENDOR_RAW_RESPONSE_EVICORE	Vendor
Vendor	VW_VENDOR_RAW_RESPONSE_HEALPRO[illegible]	Vendor
Vendor	VW_VENDOR_RAW_RESPONSE_LABCORP	Vendor
Vendor	VW_VENDOR_RAW_RESPONSE_[illegible]	Vendor
Vendor	VW_VENDOR_RAW_RESPONSE_VUEPOINT	Vendor
Vendor	VW_VENDOR_RESPONSE	Vendor
Vendor	VW_VENDOR_RESPONSE_LOAD	Vendor
Vendor	VW_VENDOR_RESPONSE_TABLEAU	Vendor
Vendor	VW_VENDOR_RESPONSE_TABLEAU_PARTITION	Vendor
View Count: 21		

TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME
[illegible]	[illegible]	[illegible]
Table Count:	[illegible]	

TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME
[illegible]	[illegible]	[illegible]
Table Count:	[illegible]	

TABLE_CATALOG	TABLE_SCHEMA	TABLE_NAME
[illegible]	[illegible]	[illegible]
Table Count:	[illegible]	

TABLE_CATALOG	STORED_PROCEDURE
RO_ORCHESTRATION	Refresh RO CAMPAIGN TARGET
RO_ORCHESTRATION	Refresh RO CAMPAIGN TARGET 2025
RO_ORCHESTRATION	Refresh RO CAMPAIGN TARGET EXTERNAL
RO_ORCHESTRATION	Refresh RO NANPA AREA CODE
RO_ORCHESTRATION	Refresh RO OMNI CAMPAIGN
RO_ORCHESTRATION	Refresh RO OPT OUT
Stored procedure Count:	6

Process Flow	Process Details
Data Intake	• Sources: Microsoft Excel Files, CSV Files, Text Files, SQL Servers (see next slide for details) • Data Types: Member Data, Provider Data, PII Data, Vendor information
Connections	• ODBC
ETL Processing	• Alteryx (On-Premises & Server) – Automated workflows in Alteryx perform all data transformations, cleansing, and manipulations. It ingests the source files, applies business logic, and prepares the dataset for loading. • Direct SQL Queries – In some cases, SQL scripts or ad-hoc queries are run directly against the SQL 35 database to insert or update data.
Data Retrieval	• Alteryx (On-Premises & Server) • Direct SQL Queries • SSIS packages (to BI Apollo team)
Final Data Output	• Sources: Microsoft Excel Files, CSV Files, Text Files, Hyper Files, Tableau Dashboards, PDFs • Locations: NAS Drive [illegible] on external sources
Data Intake	• Sources: Microsoft Excel Files, CSV Files, Text Files, SQL Servers (see next slide for details) • Data Types: Member Data, Provider Data, PII Data, Vendor information
Process Flows Count:	6

Job Name	Frequency	Days of Week	Start Time	Owner	Approx Rows Rtn
Alteryx Cleanup	Monthly	First Sunday	10:30pm	[illegible]	
Backup EYY Database	Weekly	W	8:25pm	[illegible]	
Backup CFG Database	Weekly	T	8:30pm	[illegible]	
Backup GP Database	Weekly	T	8:25pm	[illegible]	
Backup ORCHESTRATION Database	Weekly	W	8:30pm	[illegible]	
Backup Survey Database	Weekly	W	10:45pm	[illegible]	
Backup Version Database	Weekly	T	8:45pm	[illegible]	
ROSVY_CFG_CUSTOM_METRIC_TARGET Refresh	Weekly	Su	7:30pm	[illegible]	[illegible]
ROSVY_CFG_METRIC_TARGET_PIVOT Refresh	Weekly	Su	7:15pm	[illegible]	[illegible]
ROSVY CFG SURVEY QUESTION Refresh	Weekly	Su	7:45pm	[illegible]	[illegible]
ROSVY_FOCUS_SURVEY_CLEANSED Refresh	Daily	MTWThFSSu	9:05pm	[illegible]	[illegible]
ROSVY FOCUS SURVEY SCORE Refresh	Daily	MTWThFSSu	9:05pm	[illegible]	[illegible]
ROSVY_PROVIDER_SCORE_HISTORY_DATA_REFRESH	Daily	MTWThFSSu	10:30pm	[illegible]	[illegible]
ROSVY_PRF_2024 Refresh	Daily	MTWThFSSu	9:15pm	[illegible]	[illegible]
ROSVY_WK_OFFCYCLE_CLEANSED Refresh	Daily	MTWThFSSu	10:15pm	[illegible]	[illegible]
ROSVY WK OFFCYCLE SCORE Refresh	Daily	MTWThFSSu	10:25pm	[illegible]	[illegible]
SQL Agent Jobs	16				

External Server Connections
Analytics (SACOSQL37.pmmr.com\TC)
Analytics_AppCode (SACOSQL37.pmmr.com\TC)
Analytics_View (SACOSQL37.pmmr.com\TC)
BI_Analysis (TX750WPPSQL06A.pmmr.com\SQL06)
BI_Analysis_Archive (TX750WPPSQL06A.pmmr.com\SQL06)
CaseNet (TX750WVPSQL23C.pmmr.com\SQL23)
EDW_Atomic (TX750WPPSQL06A.pmmr.com\SQL06)
EDW_Atomic (TX750WPPSQL62.pmmr.com\SQL62)
EDW_Historical_Partner (TX750WPPSQL06B.pmmr.com\SQL06)
EDW_Master_Lists (TX750WPPSQL06A.pmmr.com\SQL06)
EDW_Processing (TX750WPPSQL06A.pmmr.com\SQL06)
EDW_Reporting (TX750WPPSQL06A.pmmr.com\SQL06)
EDW_Source (TX750WPPSQL06A.pmmr.com\SQL06)
ePRG_Lite (TX750WPPSQL104.pmmr.com\SQL104)
insights_config (SACOSQL37.pmmr.com\TC)
insights_reports (SACOSQL37.pmmr.com\TC)
Omni (wp000026343dx.ms.ds.uhc.com)
External Server Connection Count: 17

Database Roles
WCQ_BOBA (DBSG): write, stored proc and job creation privs to all database
WCQ_Analyst (DBSG): read privs to most databases
WCQ_OptumSvy (DBSG): read privs to Optum database
WCQ_ROSVY (DBSG): read privs to RO_SURVEY database, for central quality analysts external to our team
WCQ_TITAN_RDR (DBSG): read privs to ORCHESTRATION, SURVEY & RO_SURVEY
WM_Tableau_HCE (Service Acct): read and write privs to to all SQL95, read access to BI prod databases. Used for Alteryx access
wcq_sa_titan_prod (Service Acct): read access to BI & EDW, read access to TruCare & SQL95 prod
Database Role Count: 17

Permissions
SQL Agent Operator
SQL Agent Reader
SQL Agent User
DDL Admin
DB DataWriter
DB DataReader
Showplan
View Definition
Execute
Permissions Count: 17

Table Requirements	Description
Data Constraints	• Enforced rules such as Primary Keys ensure no duplicate records and maintain data integrity. Required fields and data types are enforced at this stage.
Metadata Fields	• Each record captures who loaded or updated it and when. For every load or update, fields like InputUser, InputDate, UpdateUser, and UpdateDate are recorded.
Triggers	• Database triggers automatically update the 'update' metadata fields whenever a record is modified.
Views for Access	• The database provides predefined SQL views that present the stored data in a structured format suitable for querying. These views make it easier for users to retrieve up-to-date data.
Read-Only Layer	• Read-only databases are refreshed daily for external consumers (BI Apollo team & individual analysts). Access is managed via DBSG & service accounts.
Table Requirements Count	5

Preferred Data Types
• Bit, bigint, smallint, int, decimal, numerical, date, datetime, datetime2, varchar

Data Categories	All Data Types
Exact numeric	• Tinyint, smallint, int, bigint, bit, decimal, numeric, money, smallmoney
Approximate numeric	• Float, real
Date and Time	• Date, time, datetime2, datetimeoffset, datetime, smalldatetime
Character strings	• Char, varchar, text
Unicode character strings	• Nchar, nvarchar, ntext
Binary strings	• Binary, varbinary, image
Other data types	• Cursor, geography, geometry, hierarchyid, json, vector, rowversion, sql_variant, table, uniqueidentifier, xml
Data Category Count	7

Aspect	Approach
User Store	Active Directory (through secure)
User Authorization	User role-based security
User Authentication	DBSG (Database Security Group) - Direct Catalog Access (Snowflake) Service Account – Alteryx Gallery Connections
Web Service Authorization	N/A
Audit Logging	Existing controls in play for protected data
Protected data such as Social Security Number, PCI or TIN	Existing controls in play for protected data

Aspect	Approach

Current Security & Authentication (DBSG)	Approval Requests for current DBSG roles
	• Users can submit for permissions via Service Now
	  • Users Manager & DBSG Owner must approve
	Creation of new DBSG roles
	• Users can submit for permissions via Service Now
	  • DBSG owner (Director level +) must approve
	  • DBSG Owner will apply permissions
	• Roles can have different levels of permission per databases
	DBAs perform the execution of roles (add/remove users)

Current Security & Authentication (Service Account)	Active directory account • Users can submit for permissions via Service Now • Users' Manager & Database Owner must approve • Contain a password are known as 'Secrets' and are maintained on Secret Server • Only certain team members have access to maintain password controls (i.e., updates) • DBAs provide Service Account and 'Secrets'

++

Hi Dave. We had standard meeting agendas during the assessment across application specific discussions (in-scope for modernization) to understand current state data architecture, ingress-egress modes, integration layers, technology stack, gaps/pain points and their expectations from a modernized solution.

Our major activities from the WellMed assessment can be grouped into the following (w/ ECIF, HCC etc milestones as applicable)

1. Current State Assessment
2. Future State Design
3. Roadmap Planning
4. Capacity Planning

Current State Inventory Template is attached in the message.

____

From what I observed during the assessment phase, here are few points that can be considered:

- Get a formal agreement from the client leadership on locking a team of few SMEs who would be on-point to help with the assessment (accessible through calls/chats/mails apart from the calls)
- Upfront access to codebase before starting assessment to proactively run analyzer tools (if required)
- Strong focus on formalizing requirements for HCC and ECIF in the early phases of the assessment, or as soon as the target solution architecture review is completed
- Keeping the client SMEs strictly within the boundaries of the data requested in the Current State inventory Template (Important). Additionally have the client SMEs review and provide formal sign-off to what they are furnishing in the inventory.
- Technical folks (Leads/engineers) should keep on re-validating their understanding of the current state solution patterns (through flowcharts/diagrams etc) with the application SMEs unless all requirements/specifications are taken into considerations. (This will avoid scope creep later during the implementation)

++

Week	Day 1	Day 2	Day 3	Day 4	Day 5
1	• Kick off • Request Codebase Access • Data Architecture • Data Organization	• Data Ingestion • Data Integration Patterns • Data Combination from Various Sources • Aggregations and Transformations	• Final Target Stage • Data Quality Measures • Data Consumption • Delivery Channels and the performance	• Technology Stack • Technology stack involved and their interactions • Alteryx <--> Snowflake integration and challenges	• Gaps/opportunities for business and operations • Review data points and compile clarification questions • Get clarifications and validate assumptions
2	• Review Current State artifacts internally and with WellMed Central Quality SMEs and receive sign-off	• Understand alignment with WellMed EDW Modernization strategy • Review current data platform capabilities, use cases, inbound/outbound integrations	• Review governance model, security practices, and performance metrics	• Identify features that not available in the target data platform or require redesign/rewrite • Explore & determine approaches/solutions to the features not available in the target platform	• Evaluate workflows and Identify existing rules complexities
3	Review data pipelines for	Map current state findings to the future	• Define data integration and interoperability	Create high level future state architecture	Create high level future state data

	handling large datasets Evaluate key considerations for the future state	state vision	with other applications and platforms		architecture
4	Determine & document data migration approach(s)	• Define data consumption approach • Define data governance and security approach	Create estimates for labor cost, Snowflake compute cost, and cloud storage cost	Document future state cloud-based data platform and supporting components	Complete Current State and supporting services documents, review internally and with WellMed Central Quality SMEs. Make Final Presentation and receive final sign-off.

++

- **Current State Assessment Report** documenting the following aspects of the current data landscape:
  - Key details of existing data platforms including data sources, data models, and tools, data governance & security practices, and technologies
  - Identification of downstream &/or upstream integrations with the current state EDW data landscape
  - Identification of existing data consumption use cases and personas being supported via the current state solution
  - Potential gaps / opportunities existing today for business and operations

- **Future State Vision** defining the targeted end-state of the data re-platform initiative inclusive of the following:
  - Future cloud application & data architecture leveraging cloud-native capabilities and in alignment with the broader WellMed EDW Modernization strategy as appropriate
  - Cloud Data migration approach for SQL95 data platform
  - Data integration and interoperability approach to ensure connectivity with other applications and platforms
  - Data consumption approach to enable advanced analytics and end user analysis
  - Data governance and security approach to ensure use is governed and data is protected

- **Snowflake Migration & Adoption Plan** laying out milestones to be achieved over the course of the future modernization project inclusive of the following:
  - Prioritization of existing data platforms for migration to the Snowflake
  - Breakdown of the steps / phases involved in moving each platform to the cloud including data migration, ETL conversion, transition of business user consumption, and decommission

- **Modernization Cost Estimate** to be used by WellMed Central Quality to request funding for the broader modernization initiative inclusive of the following:
  - Expected OAS labor costs related to the migration/modernization of SQL95 data platform from SQL Server to Snowflake
  - Potential costs of Snowflake compute (credits) to support consumption workloads
  - Potential costs of cloud storage including archive (blob) and active (Snowflake/MSSQL) data

Current State

- Alignment with WellMed EDW Modernization strategy - **discuss with John & co.?**
- Data sources, Data models, data tools - **data tools?**
- Data governance & security practices, and technologies
- Downstream &/or upstream integrations
- Data consumption use cases and personas
- Gaps / opportunities

Details of SQL Agent Jobs
Details of Alteryx and SQL95 Integration, samples of Alteryx --> SQL Server --> Alteryx
Data consumption use cases
Gaps / opportunities

Catalogs	**Job Name**	**Table Ref**
Athena	Athena Cleanup	Deletes extra backup tables from Athena database
BYY, Athena	Backup BYY Database	Backs up all tables from BYY to Athena
CFG, Athena	Backup CFG Database	Backs up all tables from CFG to Athena
GIP, Athena	Backup GIP Database	Backs up all tables from GIP to Athena
ORCHESTRATION, Athena	Backup ORCHESTRATION Database	Backs up all tables from ORCHESTRATION to Athena
Survey, Athena	Backup Survey Database	Backs up all tables from Survey to Athena
Vendor, Athena	Backup Vendor Database	Backs up all tables from Vendor to Athena
CFG	ROSVY_CFG_CUSTOM_METRIC_TARGET Refresh	CFG_CUSTOM_METRIC_TARGET
CFG, Survey	ROSVY_CFG_METRIC_TARGET_PIVOT Refresh	CFG_CUSTOM_METRIC_TARGET, FOCUS_SURVEY_QUESTION_SCORE, WM_OFFCYCLE_SCORE
CFG	ROSVY_CFG_SURVEY_QUESTION Refresh	CFG_SURVEY_QUESTION
CFG, Survey	ROSVY_FOCUS_SURVEY_CLEANSED Refresh	FOCUS_SURVEY_ELIZA_CLEANSED, CFG_PROVIDER, CFG_CLINIC, CFG_CLINIC_GROUP, CFG_REGION, CFG_MARKET
CFG, Survey	ROSVY_FOCUS_SURVEY_SCORE Refresh	FOCUS_SURVEY_QUESTION_SCORE, CFG_PROVIDER, CFG_CLINIC, CFG_CLINIC_GROUP, CFG_REGION, CFG_MARKET
CFG, Survey	ROSVY_PROVIDER_SCORE_HISTORY_DATA_REFRESH	PROVIDER_SCORE_HISTORY, CFG_PROVIDER, CFG_CLINIC, CFG_CLINIC_GROUP, CFG_REGION, CFG_MARKET
CFG, Survey	ROSVY_PRP_2024 Refresh	FOCUS_SURVEY_QUESTION_SCORE, WM_OFFCYCLE_SCORE, CFG_PROVIDER, CFG_CLINIC, CFG_CLINIC_GROUP
CFG, Survey	ROSVY_WM_OFFCYCLE_CLEANSED Refresh	WM_OFFCYCLE_CLEANSED, CFG_PROVIDER, CFG_CLINIC, CFG_CLINIC_GROUP, CFG_REGION, CFG_MARKET
CFG, Survey	ROSVY_WM_OFFCYCLE_SCORE Refresh	WM_OFFCYCLE_SCORE, CFG_PROVIDER, CFG_CLINIC, CFG_CLINIC_GROUP, CFG_REGION, CFG_MARKET
	SQL Agent Jobs	**16**

++

Potential questions from Ashwini

- Any validation plan for migrated data accuracy and completeness?
- **What indexing or partitioning strategies in SQL Server need to be reimagined in Snowflake (e.g., clustering keys)**
- Data accuracy validation - How will rollback be handled in case of migration failure?
- Data deduplication or cleansing steps if any?
- Any checkpoints to verify Alteryx-Snowflake integration stability?
- Cut over plan for production Alteryx workflows to Snowflake.

++

Candidates for PoC
Snowflake Alteryx integration and performance
SQL Agent Jobs
Stored procedures
Triggers
ODBC Performance
External partner integrations

Copy of Alteryx and SQL server inbound and outbound

++

Activities to be completed in the first three weeks* (stating 09/24/2024)

Monday	Tuesday	Wednesday	Thursday	Friday
23	24 Kick off	25 Review Current state Architecture	26 Review current Rules engine and functions & capabilities	27 Examine current state Functional and technical gaps
30 Evaluate the current rule authoring system , workflow to identify technical and functional gaps to address	1 Review Existing Rules	2 ★ Identify/categorize existing rule complexities (approach and stratification draft)	3 Classify existing rules based on their complexities	4 Identify priorities and approach for rules modernization
7 Review the existing data pipelines capacity for handling large volumes (1.7 billion claims) and their efficiency	8 ★ **Create an initial assessment (draft) report for Current state**	9 Draft potential features for a modernized solution.	10 Technology Options Assessment	11 ★ Define potential target cloud technology options
14 Define and create comprehensive list of target solution specifications and features.	15 Review comprehensive list of target solution specifications and features.	16	17	18

* Interviewees are being identified
* Additional meetings will be set up as needed

Optum

7

From <https://teams.microsoft.com/v2/>

Activities and Planning during the first four weeks* (starting 06/09/2025)

Monday	Tuesday	Wednesday	Thursday	Friday
9 Kick Off	10 Review Current State - Architecture	11 Review Current State – Ingress-egress modes & Integration layers	12 Review Current State – Technology stack	13 Review Current State – Functional and Technical gaps
16 Review Current State – Evaluate workflows, Identify existing rule complexities	17 Review Current State – Expectations from modernized solution	18 Review Current State – Draft and update Inventory Template	19 Review Current State – Inventory Template	20 Review Current State – review data pipelines for handling large volumes
23 Review Current State – Data Ingestion, Security, PII and Data Governance Rules	24 Key considerations for Future State	25 Review Future State - Architecture	26 Review Future State – Initial assessment report for Future state	27 Review Future State – Technology Options Assessment
30 Future State - Define potential Target Cloud Technology options	1 Define and create comprehensive list of Target solutions, specifications and features	2 Outstanding questions & Final Review of proposed solutions	3 High level Review and Roadmap Planning	4 Capacity Planning/Personas
7 Sign Off				

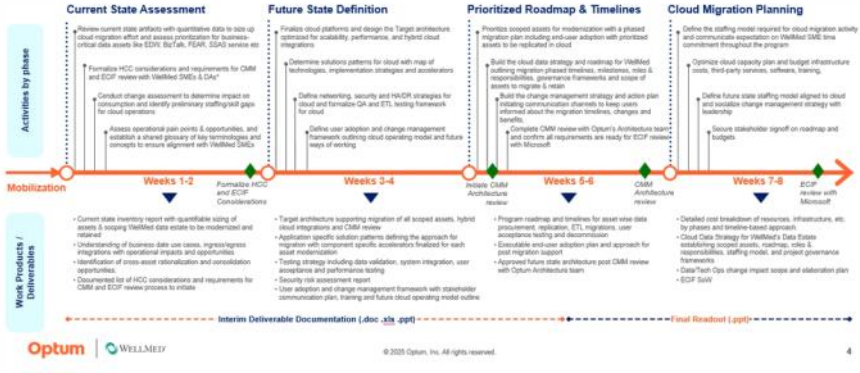
* Additional meetings will be set up as needed

Optum

2

Assessment Phase Outline

We propose a comprehensive approach to confirm and address scope, end state architecture, automation opportunities, business impact risk, critical path dependencies, quality / success metrics and change management imperatives



Optum | WellMed

4