Indian Health Service

National Patient Information Reporting System (NPIRS)

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AUGUST 2024

Qlik Dashboard Development & Life Cycle

OVERVIEW, UPGRADE AND ADVANCED NEW FEATURES

Agenda

➢ Introduction

➢ IHS Qlik® Environment Overview

➢ Dashboard Lifecycle Activities

➢ Accessing NPIRS Dashboards

➢ 2024 Qlik® Sense Overview and AI New Features

➢ 2024 Qlik® Feb. Release - Upgrade & Advanced New Features

➢ Q & A

Introduction

- The Indian Health Service's (IHS) national data repository, National Patient Information Reporting System (NPIRS), enables IHS the ability to produce reliable and timely reports in support of statutory, regulatory, and administrative obligations, including user population counts, workload reporting, accreditation, and GPRA performance measures.

- The NPIRS system also enables the consolidation and integration of electronic health record information to improve timelines, and frequency of verified and published IHS data related to patient registration and health care encounters.

- This system provides more accurate, timely, and a broader scope of information to clinical and administrative managers throughout the Indian health system.

- Provides the framework for a Business Intelligence environment that enables data discovery, mining, predictive analysis and trending of key performance indicators in support of patient care and patient care management.

BI/BA Solutions

Business Intelligence

Answers to Questions:

What happened?

Why?

When?
How many?

Includes:
Reporting (KPIs, metrics)
Dashboards

Scorecards

Ad-hoc Queries

Business Analytics

Answers the Questions:

Why did this happen?
Could/would it happen again?
What will happen if we make a change?
What else does the data tell us?

Includes:
Data Mining
Predictive Modeling
Forecasting
Trend Analysis
Geospatial Analysis

IHS Qlik® Environment Overview

➢ The Qlik® Enterprise Environment is installed and maintained on DDMA Servers.

➢ Each environment contains Qlik® Sense, Qlik® View, Geo-Analytics and Qlik® Nprinting.

➢ Each environment has an independent data source connection that does not cross environment boundaries.
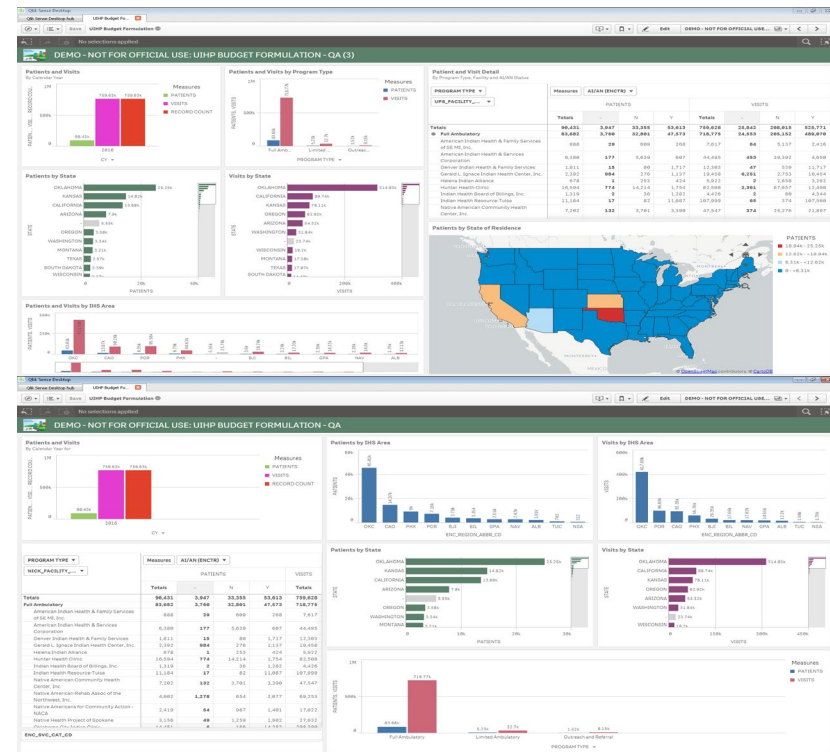
Qlik® Enterprise Environment
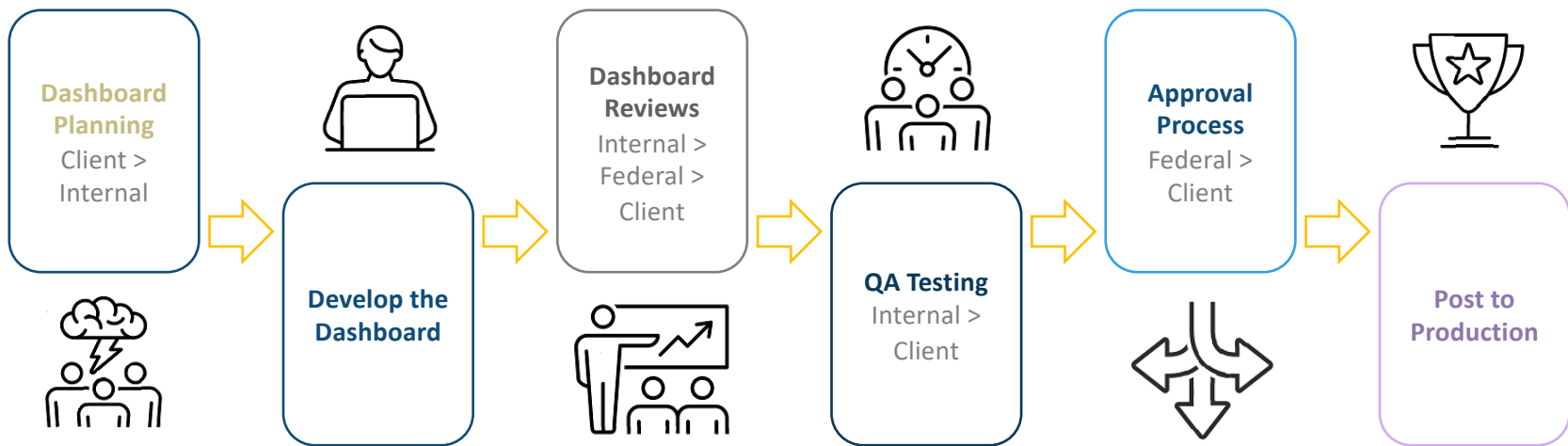
Qlik Q®

DEV

TEST

PROD
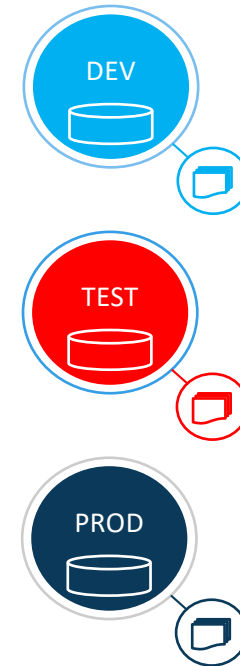
Dashboards

➢ A dashboard is a reporting solution, delivered by a Business Intelligence tool, that enables the integration and visualization of data to support decision making, trending, analysis and reporting.

➢ **3 'types' of dashboards**

- Operational Dashboards
- Strategic or Business Value Dashboard (BVD)
- Analytic Dashboards

Planning: Life Cycle Overview

Dashboard Planning
Client > Internal

Develop the Dashboard

Dashboard Reviews
Internal > Federal > Client

QA Testing
Internal > Client

Approval Process
Federal > Client

Post to Production

Planning: Client Meeting Key Points

Client insights, feedback and answers

➢ DDMA will set up a project kickoff meeting with the client to determine these basics

- Dashboard Objective
- Data Sources
- Visual Objects and Tables
- Draft the Requirements Documentation

Planning: Client Feedback

Who is the audience?

❑ DDMA develops and maintains dashboards for a wide variety of clients/stakeholders for IHS that include:

➢ IHS Users
  ▪ IHS Headquarters, Offices/Divisions, Program & Area Offices
➢ Tribal/Urban Users
➢ Internal/External Partners

Planning: Security Considerations

Does the dashboard require Secure Access?

➢ The default level of security for all dashboards is the AD Group(s) that are connected to the dashboard stream

➢ Section Access can provide additional levels of security to better protect the dashboard data to users

Planning: AD Group and Stream

Existing Stream and AD Group(s)

- If the dashboard is being developed for an existing client, the developer will require approval from the Federal Lead to connect to existing Streams or AD Groups.

New Stream and AD Group(s)

- If the new client dashboard is new to the environment, the developer will consult with Federal management for guidance on the following:

DASHBOARD	→	STREAM	←	AD GROUP

SECTION ACCESS	→	ROW DATA REDUCTION	→	COLUMN DATA REDUCTION
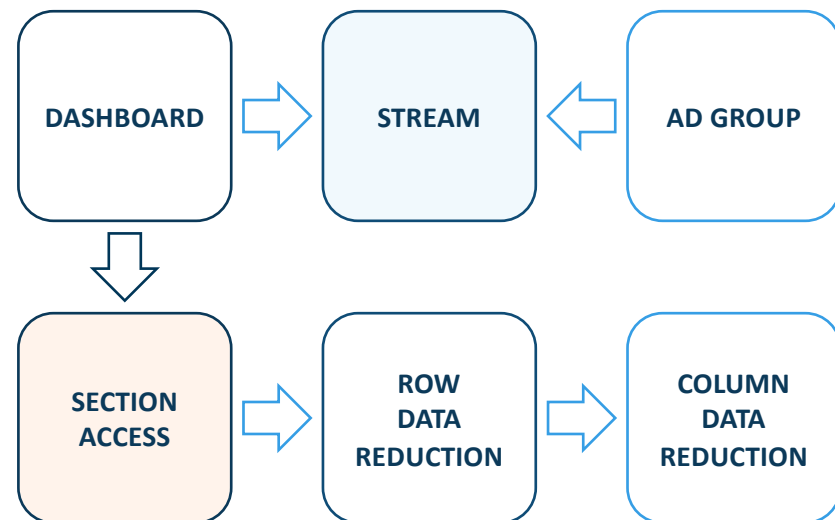
* Some abilities may require the developer to work with the Qlik® Sense Administrator.

Dashboard Design

Best Practices and Guidelines

- NPIRS provides a dashboard template and best practice guidelines for developing and designing a dashboard.

- Apps/dashboards developed on DEV are migrated to TEST for QA and later to PROD via the NPIRS migration process guidelines.

Designing: Developers Template

Developers Dashboard Template

➢ NPIRS has designed a developer's dashboard that can assist the build of a new dashboard with most of the main components already added, including:

- Layout and Navigation
- Disclaimer Sheet
  - Scripting that supports the Disclaimer functionality
- General sample sheets
- Overview sheet
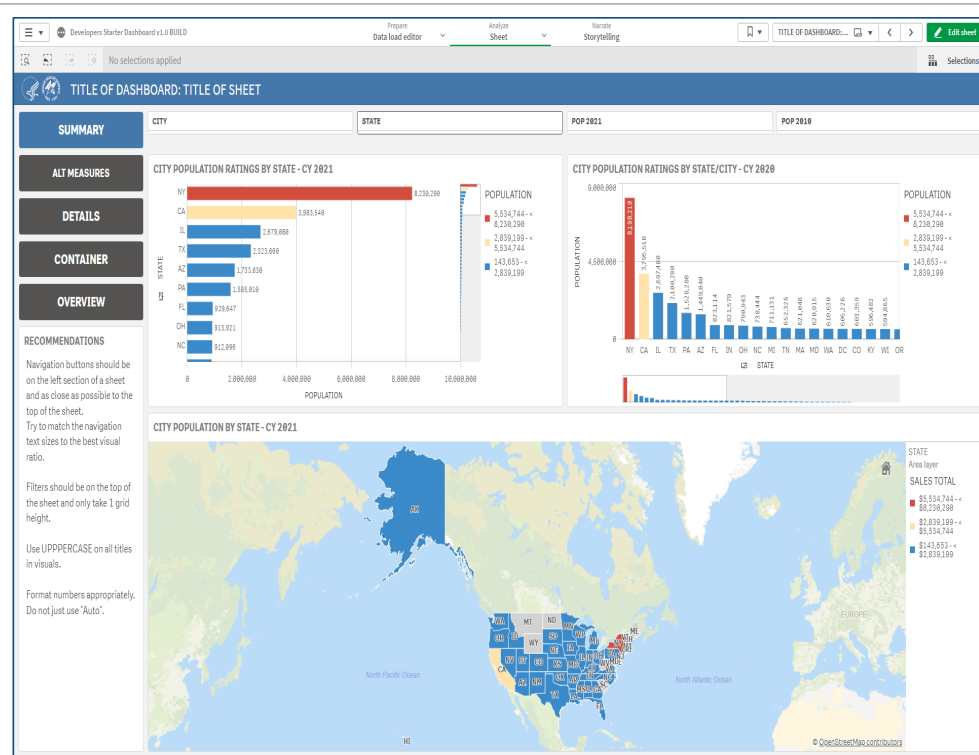
Designing: Summary Sheet

Summary Sheet

- As it may not be required, and depending on the client or Federal lead direction, a summary sheet can be very useful to brief the users of the most important data components at a glance.

- If unclear of what objects that should be on the summary sheet, always utilize the direction of the client or Federal lead for guidance.

- Developers should be mindful not to over populate dashboard sheets so that the sheet will display properly on 1366px resolution screens.
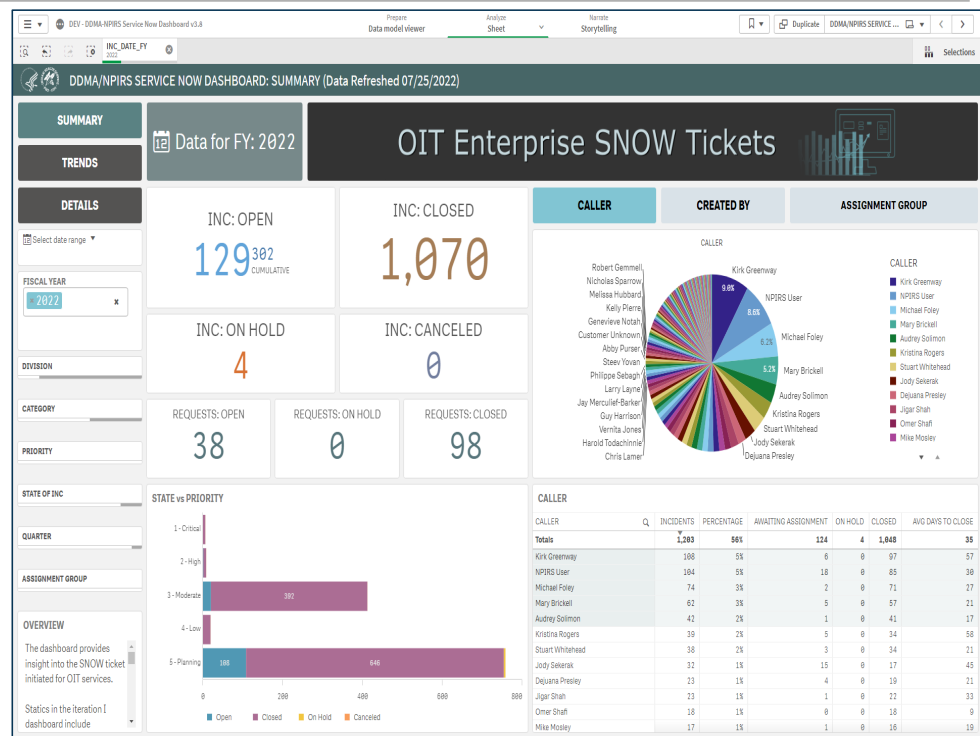
Designing: Navigation & Filters

Navigation (1)

➢ The Navigation creates the dashboard flow and visually allows the user to identify the sheets in the dashboard.

Filters (2)

➢ Filters allows ease of use for the users to sort data that best works for their objectives.
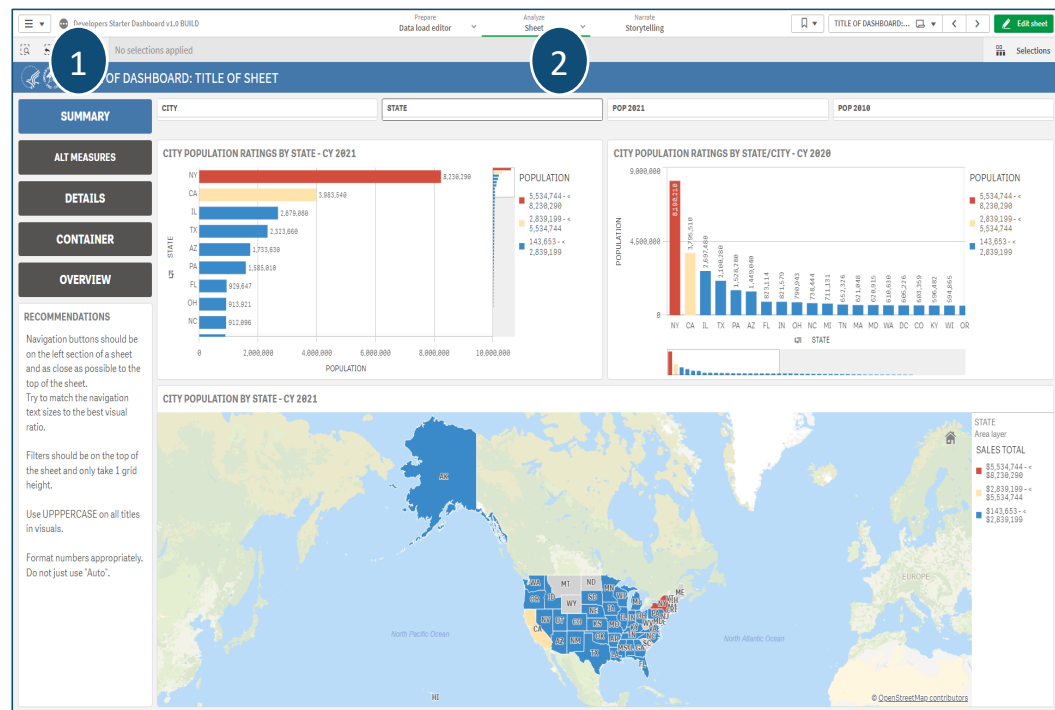
Designing: Titling & Labeling

Title Everything (if possible)

➢ Titling all objects, even if there is no title displayed, will allow object exports for Embedding, Story Telling building, Qlik® nPrinting report building and Application Support Dashboards to easily identify the objects. This will also assist the user when they are using Insight Advisor.

Labels that Make Sense

➢ Data dimension and measure labels should be manually entered and not allowed to default. This ensures the titling in the filter tracker (top right in dashboard) will correctly display it properly. This is especially required when using formulas in the label property.

TOTAL CITIES POPULATION IN THE UNITED STATES - CY 2021

40,000,000   60,000,000

20,000,000   80,000,000

83,207,946
POPULATION

0   100,000,000

DETAILS OF POPULATION FROM 2010 TO 2021

CITY	STATE	POP 2010	POP 2021	GROWTH RATE
Anchorage	AK	293,321	282,958	-3.53%
Birmingham	AL	212,328	207,235	-2.40%
Huntsville	AL	180,941	205,472	13.56%
Mobile	AL	194,577	186,542	-4.13%
Montgomery	AL	205,593	197,777	-3.80%
Little Rock	AR	193,972	196,968	1.54%
Chandler	AZ	236,454	269,123	13.82%
Gilbert	AZ	209,493	262,514	25.31%
Glendale	AZ	226,236	257,233	13.70%
Mesa	AZ	440,993	538,146	22.03%
Peoria	AZ	154,846	183,357	18.41%
Phoenix	AZ	1,449,040	1,733,630	19.64%
Scottsdale	AZ	217,638	265,249	21.88%

Designing: Labeling

Labeling Objects for Clarity

➢ The label of an object will by default, repeat the dimension name or the measures expression.

➢ Labels should be manually updated to display a proper title of the dimension or measure.
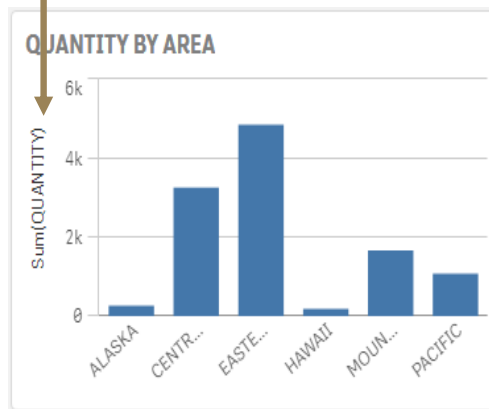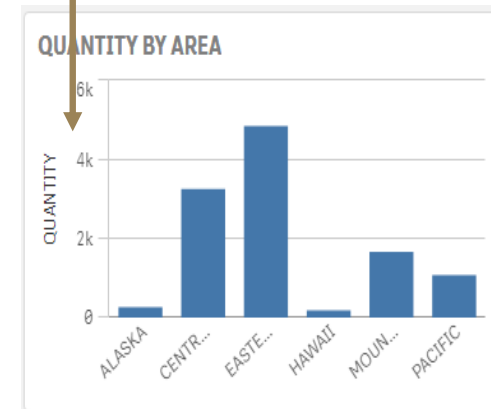
Designing: Overview Sheet

Overview Sheet (optional)

➢An overview sheet allows the ability to offer detailed instructions for the users that may assist in understanding how to use the dashboard or the data.

➢Overview sheets can contain sheet screenshots, demonstrative graphics and detailed text.

➢Work with the client to see if an overview sheet is required.

Deliverables: Landing Page

Deliverables: Internal Reviews

Internal Review with Contract Management and Peers

- When the dashboard development has been completed, it is highly recommended to get feedback from the contract management staff and peers.

- This helps identify any possible mistakes made or ambiguous data before presenting to the Federal management for their review.

Internal Review with Federal Management

- All dashboards must be approved by the Federal Managers prior to the client review.

- The Federal managers may suggest additional improvements for the dashboard.

Deliverables: Client Review

Introducing the Client to the New Dashboard

- After the dashboard has been approved by Federal Management, it is now time to migrate the dashboard to the TEST Enterprise Environment for client management review, feedback, and approvals.

Static Reporting: Qlik® Nprinting

When reports are completed and approved by the Federal manager and the client, then it must be reviewed by the IHS Privacy Act officer to give the final approval for delivery.

Qlik Nprinting® has the ability to automate the static report process and to be distributed to the end users via email.

Quality Assurance (QA) Testing

Preliminary

- NPIRS will request from the client to provide a list of users to serve as testers. These users will need to be added to the assigned Qlik® Stream AD Group.

- If Section Access has already been implemented in the dashboard, then the section access process will need to be completed before testing.

- NPIRS will notify the client when testing is ready to start.

Client Testing Process

- Client users will test the dashboard and provide feedback to the client management staff.

- The client management staff will provide a list of corrections or adjustments that are needed for the dashboard.

- NPIRS staff will make the required adjustments to the dashboard and represent to the client.

- This process may need to be repeated until the client is able to approve the dashboard.

Final Stages

➤ After QA has completed and the client has approve[d] for Production, NPIRS initiates the final stages.

➤ The Federal Manager will give the final approval to migrate the dashboard and landing page to the Production environment.

➤ After Production migration, NPIRS will test the dashboard to ensure it is working as expected and testing the landing page links.

➤ The Federal Manager will be notified the dashboar[d] and landing page is ready for the client.

➤ The Federal Manager will send an email to the clie[nt] notifying them their dashboard is published to Production and include the landing page link.
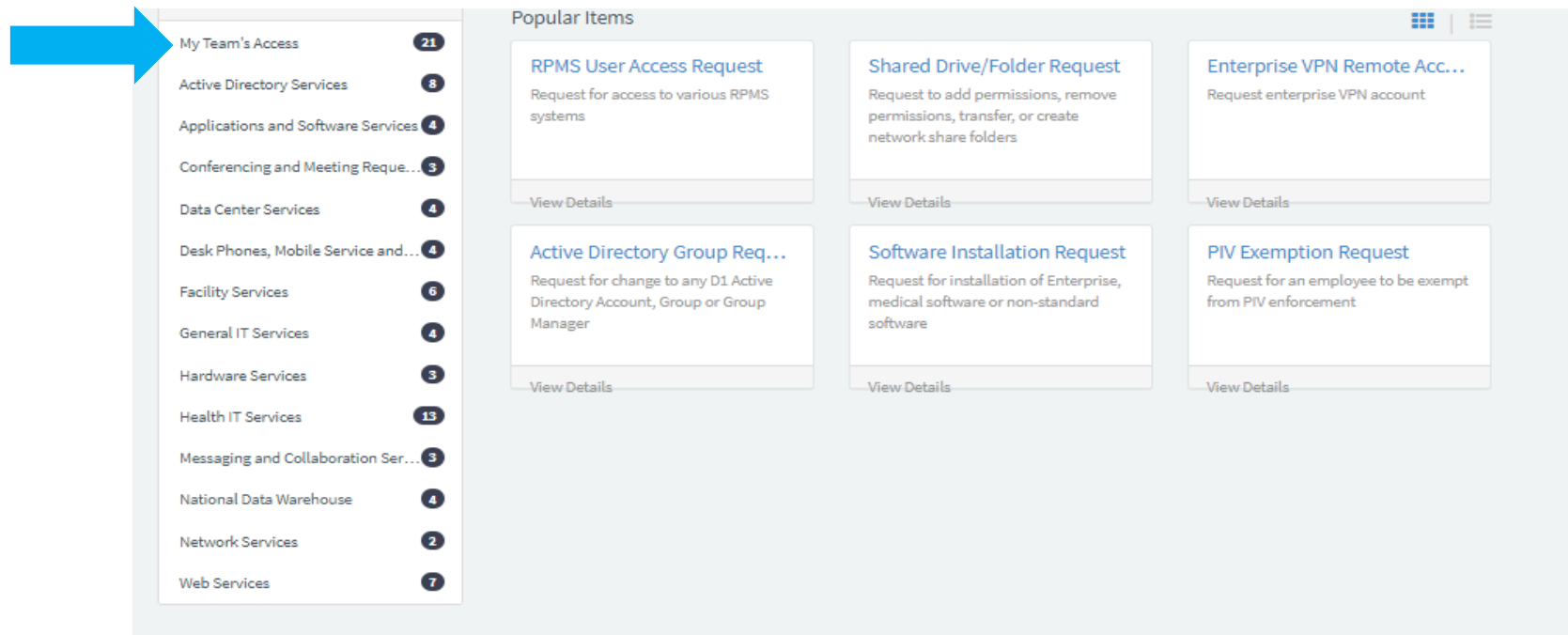
How to access Qlik® Dashboard

ACCESS PROCESS FOR PROD DASHBOARDS

➢Requestor's Supervisor should submit a SailPoint request for access to a NPIRS PROD Dashboard.

➢The Product Owner will approve the request.

➢NPIRS receives the request

➢Access is granted by adding the requestor to the PROD Dashboard appropriate AD Group.

➢User(s) are notified of their access

SNOW_Sailpoint Request

Popular Items

My Team's Access (21)

Active Directory Services (8)

Applications and Software Services (4)

Conferencing and Meeting Reque... (3)

Data Center Services (4)

Desk Phones, Mobile Service and... (4)

Facility Services (6)

General IT Services (4)

Hardware Services (3)

Health IT Services (13)

Messaging and Collaboration Ser... (3)

National Data Warehouse (4)

Network Services (2)

Web Services (7)

RPMS User Access Request
Request for access to various RPMS systems
View Details

Shared Drive/Folder Request
Request to add permissions, remove permissions, transfer, or create network share folders
View Details

Enterprise VPN Remote Acc...
Request enterprise VPN account
View Details

Active Directory Group Req...
Request for change to any D1 Active Directory Account, Group or Group Manager
View Details

Software Installation Request
Request for installation of Enterprise, medical software or non-standard software
View Details

PIV Exemption Request
Request for an employee to be exempt from PIV enforcement
View Details

SNOW_Sailpoint Request

CHEF Access Request
Request access to the CHEF system

View Details

Cloud Account Access Requ...
Request for access to Cloud Accounts (ex. Azure)

View Details

D1 Secure FTP Access for RP...
Request for Secure FTP Access for RPMS

View Details

Direct Messaging Access Re...
Request for access to RPMS Direct

View Details

EDR Admin Access Request
Request for EDR Admin Access

View Details

Enterprise VPN Remote Acc...
Request enterprise VPN account

View Details

Healthshare (Ensemble) Acc...
Request for access to Healthshare (Ensemble)

View Details

IT Hardware Request
Request IT Hardware for new or existing employees

View Details

Multi-Access Enablement
Request Access to multiple systems and services in a single Request

View Details

NPIRS - System Access Requ...
Request access to NPIRS enterprise systems

PHR Admin Access Request
Request for administrative access to the PHR system

PIV Exemption Request
Request for an employee to be exempt from PIV enforcement

SNOW_Sailpoint Request

NPIRS - System Access Request
Request access to NPIRS enterprise systems

* Requested for

* Requested by

    ❶   Vanessa Weaver

* Facility

Phone Number

Current Entitlements

Email Address

Title

Service Units

-- None --

* Access Type

-- None --

Employee Role Type

☐ Health Provider

☐ Office Worker

☐ Non-IHS

Complete the request for access for the user that will need access to the BI/Qlik reporting solution.

SNOW_Sailpoint Request

Request access to NPIRS enterprise systems

Service Units

-- None --

* Access Type

-- None --

	🔍
NPIRS [NADQ Dashboard]	▲
NPIRS [NADQ Web Portal]	
NPIRS [National UDS Dashboard]	
NPIRS [NDECI Dashboard]	
NPIRS [OEHE Dashboard]	
NPIRS [Operational Reporting Dashboard]	
NPIRS [Opioid Surveillance Dashboard]	▼
-- None --	▲

* Justification

[ ]

Submit   📎 Add attachments

Select the BI Dashboard of interest, if you don't see the dashboard in the list, select 'NPIRS Other' and enter the name of the dashboard in the pop-up field

Qlik® Documents

All subjects discussed in this presentation have detailed documentation that we can provide upon request:

➢ STANDARDS DOCUMENTS

- Qlik® Data Overlay - Flow Diagram [PDF]
- NPIRS High Level Overview v1.3 [PDF]
- AD Group Requests in SNOW User Guide [PDF]
- Qlik® Sense App Management Guidelines [PDF]
- Qlik® Sense Apps Dashboards Migration Processes [PDF]
- Qlik® Sense Dashboard Development Guidelines [PDF]
- Qlik® Sense Dashboard Disclaimer Sheet Standards [PDF]
- Qlik® Sense PowerUser Role [PDF]
- Qlik® Sense Tasks Guidelines [PDF]
- Section Access Quick Start Guide [PDF]
- Section Access Request Requirements v1.0 [PDF]

2024 Qlik Sense Overview
& AI new features

➢Qlik Sense 2024 delivers a comprehensive suite of intuitive tools for seamless data exploration and visualization.

➢Discover the powerful data analytics platform that empowers organizations to uncover impactful insights and make informed decisions.
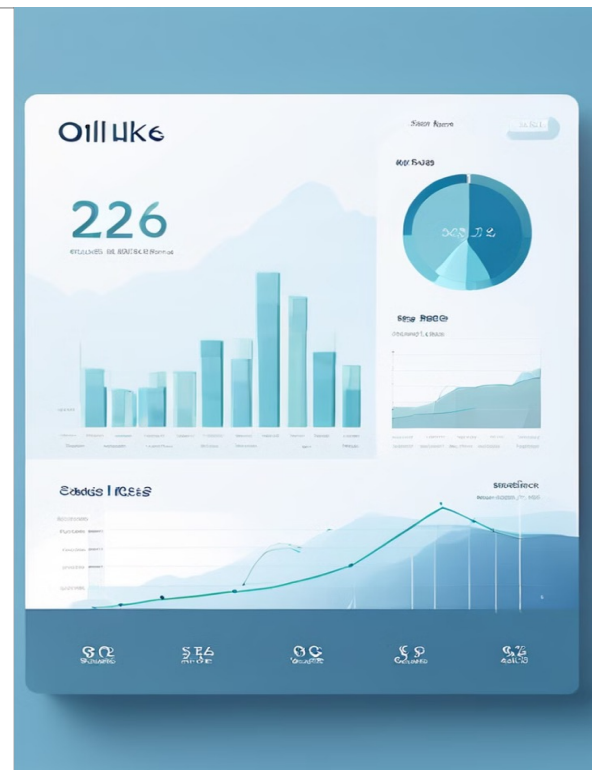
Key features and enhancements

Upgraded Analytics Engine

Qlik Sense 2024 features a powerful, next-generation analytics engine that delivers lightning-fast performance and unparalleled scalability, ensuring seamless data processing and insights even with large, complex datasets.

Intelligent Visualizations

The platform's advanced data visualization capabilities enable users to create stunning, interactive charts and graphs that intuitively convey insights. Automated suggestions help identify the most relevant visualizations for the data.

Improved data visualization

Sophisticated Visualizations

Qlik Sense 2024 offers advanced data visualization capabilities, enabling users to create stunning, intuitive charts and graphs that bring insights to life.

Intuitive Exploration

The platform's streamlined user interface and automated visualization suggestions make it easy for users of all skill levels to uncover hidden patterns and trends.

Expanded Capabilities

Qlik Sense 2024 seamlessly integrates with leading data visualization tools, empowering users to leverage the full spectrum of analytical capabilities.

Advanced analytics and insights

Predictive Analytics

Qlik Sense 2024 leverages powerful AI algorithms to surface predictive insights, enabling users to forecast trends, identify risks, and make data-driven decisions.

Automated Anomaly Detection

The platform's advanced analytics engine automatically identifies anomalies and outliers in data.

Prescriptive Recommendations

Qlik Sense 2024 provides prescriptive recommendations based on its deep analysis, guiding users towards optimal strategies and empowering them.

Seamless Integration with Other Tools

Qlik Sense 2024 seamlessly integrates with a wide range of leading business intelligence, data visualization, and productivity tools.

Increased Scalability and Performance

Scalable Architecture

Qlik Sense 2024 features a highly scalable architecture that can seamlessly handle growing data volumes and user demands.

Distributed Computing

The platform's distributed computing capabilities leverage the power of multiple nodes, distributing the workload and enabling rapid data processing at scale.

Intelligent Resource Allocation

Advanced algorithms intelligently allocate system resources, prioritizing critical tasks and ensuring consistent, high-performance analytics and data exploration experiences.

Enhanced User Experience

Qlik Sense 2024 delivers an
unparalleled user experience,
seamlessly blending intuitive design,
intelligent data exploration, and
personalized insights.

Streamlined Data Preparation

Intelligent Data Extraction

Qlik Sense 2024 offers advanced capabilities to seamlessly extract, transform, and load data from a wide range of sources, streamlining the data preparation process.

Intuitive Data Modeling

The platform's user-friendly data modeling tools enable users to quickly and intuitively build robust data models, ensuring data integrity and optimized analytics.

Automated Workflows

Qlik Sense 2024 provides powerful automation features, allowing users to create and schedule data refreshes, transformations, and other repetitive tasks, saving time and effort.

Intuitive Data Visualization

Drag-and-Drop Interface

Qlik Sense's intuitive drag-and-drop interface allows users to easily create stunning visualizations without the need for complex coding or technical expertise.

Responsive Design

Qlik Sense's responsive design ensures that visualizations and dashboards look great on any device, from desktop computers to mobile devices.

Customizable Visualizations

Qlik Sense offers a wide range of visualization types, including charts, graphs, maps, and more.

Seamless Data Integration

1   **Connect to Multiple Data Sources**

Qlik Sense allows users to easily connect to a wide range of data sources, including databases, spreadsheets, and cloud-based applications.

2   **Real-Time Data Updates**

Qlik Sense's powerful data integration capabilities ensure that visualizations and dashboards are always up-to-date, with real-time data updates.

3   **Data Preparation Tools**

Qlik Sense includes a range of data preparation tools that make it easy to clean, transform, and combine data from multiple sources.

Collaborative Analytics

Shared Insights

Qlik Sense makes it easy for teams to share insights and collaborate on data analysis. Users can create and publish interactive dashboards, reports, and visualizations that can be accessed by colleagues and stakeholders.

Annotations and Comments

Qlik Sense allows users to add annotations and comments directly to visualizations, enabling teams to discuss and contextualize their findings in real-time.

Streamlined Workflows

Qlik Sense's collaborative features help to streamline workflows, making it easier for teams to work together, share insights, and make data-driven decisions.

Advanced Analytics and AI

1   **Predictive Analytics**

Qlik Sense's advanced analytics capabilities enable users to leverage powerful predictive modeling techniques, such as regression analysis and time series forecasting, to uncover hidden patterns and make more accurate predictions.

2   **Augmented Intelligence**

Qlik Sense's augmented intelligence features, including natural language processing and machine learning, help users to uncover insights and make more informed decisions by automating complex data analysis tasks.

3   **Artificial Intelligence**

Qlik Sense's AI-powered features, such as intelligent search and recommendation engines, provide users with personalized insights and suggestions, helping them to navigate and explore data more effectively.

Augmented Intelligence

Natural Language Processing

Qlik Sense's natural language processing capabilities allow users to ask questions in plain English and receive relevant, data-driven insights in response.

Smart Recommendations

Qlik Sense's intelligent recommendation engine provides users with personalized suggestions for visualizations, insights, and data connections.

Automated Insights

Qlik Sense's machine learning algorithms automatically identify and surface important insights, trends, and anomalies in the data.

Contextual Awareness

Qlik Sense's contextual awareness features understand the user's intent and the specific business context, providing relevant and tailored insights.

Scalable and Secure Platform

1	2	3
Scalability	**Enterprise-Grade Security**	**Governance and Compliance**
Qlik Sense is designed to handle large and complex data sets, enabling businesses to scale their analytics capabilities as their data and user base grow.	Qlik Sense offers robust security features, including role-based access controls, data encryption, and user authentication.	Qlik Sense's governance features help businesses to maintain control over their data and analytics processes.

IHS/Qlik Environment – Current Status

DEV & TEST ENVIRONMENTS:
FEBRUARY 2024 RELEASE

February 2024 Release: New Features

The overall user experience has been refined with a more intuitive interface, faster navigation, and improved responsiveness. These enhancements make it easier for users to interact with the platform and access the information they need quickly.

1. Development Enhancements

2. Data

3. Enterprise Environment

Development Enhancements

These functionalities are commonly used in SQL and with many ML data preparation use cases

- ➢ New Pivot Table
- ➢ Enhanced Scatter Plots
- ➢ Heatmap Improvements
- ➢ Grid Chart
- ➢ Customizable KPI Objects
- ➢ Enhanced Line Charts
- ➢ Map Visualizations
- ➢ Styling Grid, Funnel & Sankey charts

Development Enhancements

➢ **Layout container**
- In the Layout container, charts can be placed in a freeform manner with or without a snapping grid.
- Charts can overlap, be stacked, and controlled with show conditions.

➢ **Filter pane styling**
- General settings for title font styling, background, border and shadow.
- Chart specific styling for header and content font styling, color settings for selection state, background color and image.
- Improved dynamic filtering and highlighting features allow users to interactively filter data directly within visualizations.

➢ **Copy and paste style**
- A new menu choice for copying style settings from one chart to another.

➢ **Borders and shadows:**
- Charts inherit the border setting from the theme but the border width and color setting can now be overridden and customized per chart.
- Chart shadow is a new property on charts, providing a shadow contour around the chart, with options for size and color.
- Borders and shadows works very well in the Layout container where charts can overlap and be stacked.

Qlik Data

Data window functions in engine load script

➢Customers can now perform complex calculations on their data tables in the Qlik load script to perform aggregation on different partitions without losing the granularity of their data.

Qlik EE

➢ Enhanced Data Loading Performance

➢ Security and Compliance Updates

➢ Export functionality added for audits

➢ Expanded Connectivity Options

Contact Information

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Questions?

THANK YOU!