



NextGen Highlights


The 4th generation platform.

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Architecture

Deployment

Microservices

Designed & Developed from ground up with microservice architecture to meet current and future needs of any enterprise.

Containerized

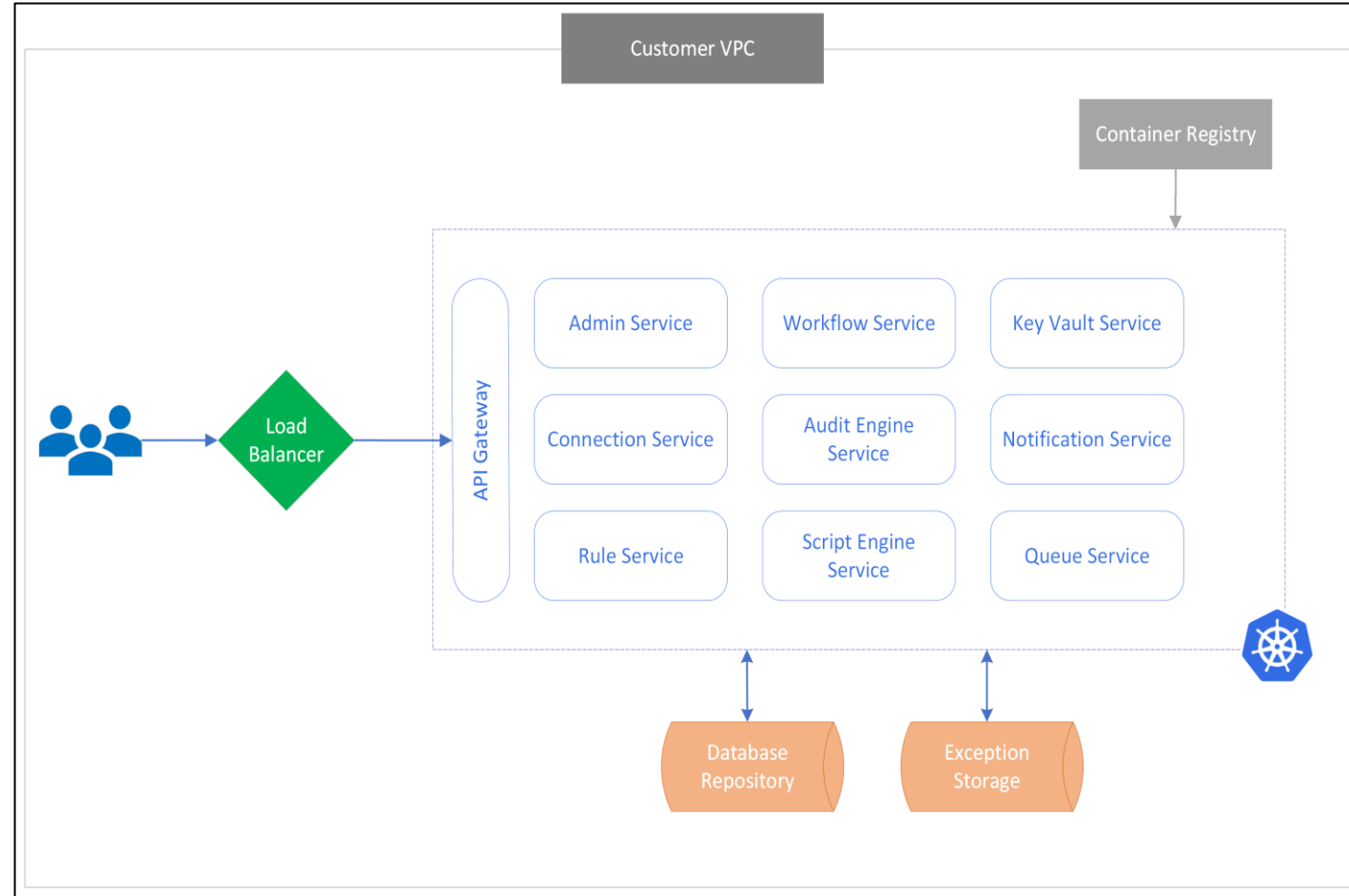
Packaged as containerized application to be deployed on-prem or on any cloud platform (EKS, AKS, GKE, OpenShift).

Auto Scaling

Deploy in any Kubernetes environment to get ability to auto scale the application based on demand.

Automated Deployments

Single click installation, upgrade and rollback in any environment. Ability to enable GitOps.



Security

New RBAC's

Org, Account or Workspace based access controls. Now users can create their own connections, folders and grant access to others.

Integrated Key Vault

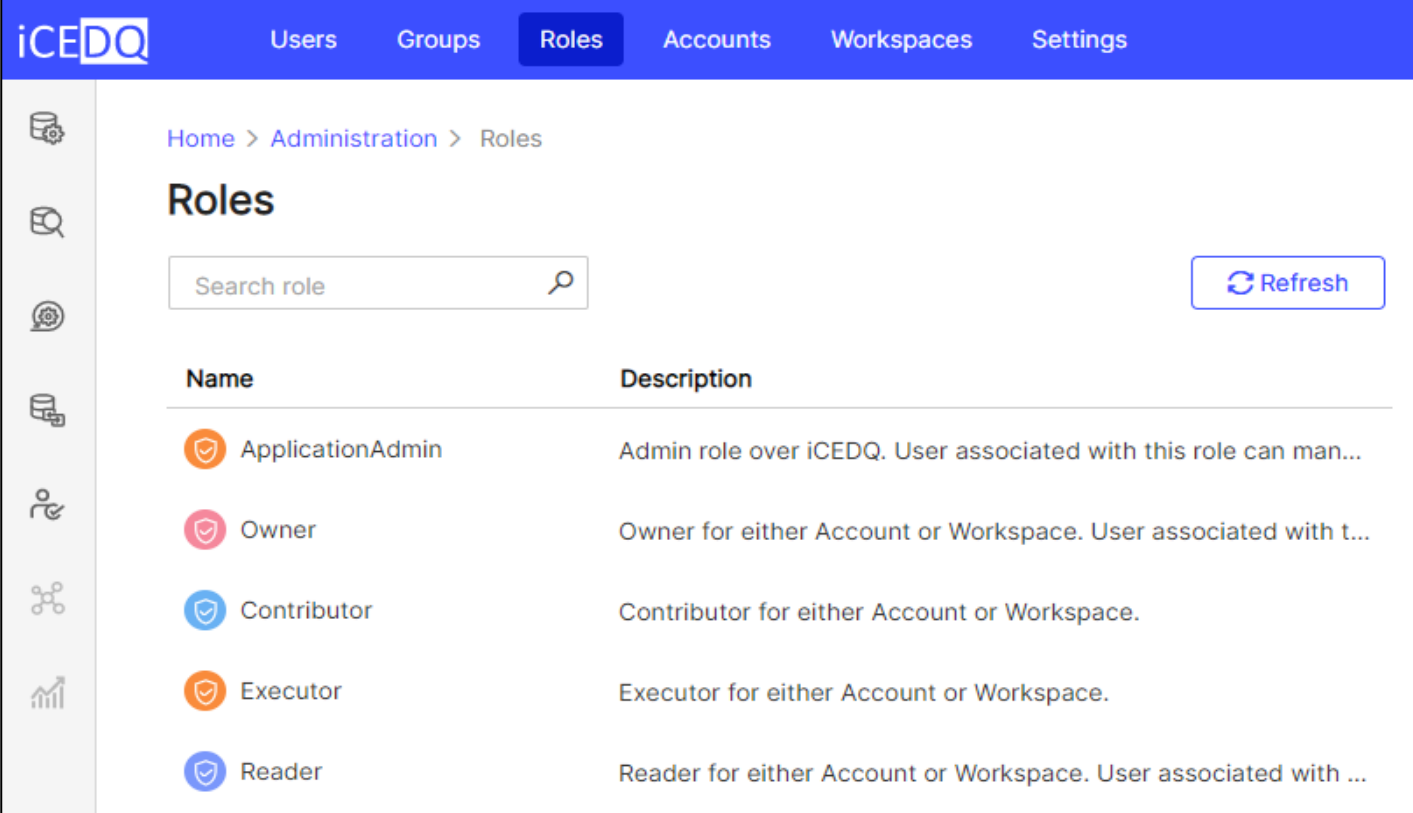
Key Envelop Encryption for storing credentials and other sensitive information. Customers will be able to bring their own keys.

LDAP & SSO






Sync groups and users from LDAP. Integrate with IDPs like Azure AD, Okta, Ping using OIDC to enable SSO.

Auth Protocol

Access all the Rest API's using OAuth 2.0 protocol



The screenshot shows the iCEDQ Roles management interface. The top navigation bar includes 'Users', 'Groups', 'Roles' (selected), 'Accounts', 'Workspaces', and 'Settings'. The breadcrumb trail is 'Home > Administration > Roles'. A search bar labeled 'Search role' and a 'Refresh' button are present. Below is a table of roles:

Name	Description
 ApplicationAdmin	Admin role over iCEDQ. User associated with this role can man...
 Owner	Owner for either Account or Workspace. User associated with t...
 Contributor	Contributor for either Account or Workspace.
 Executor	Executor for either Account or Workspace.
 Reader	Reader for either Account or Workspace. User associated with ...

Logging & Monitoring

Logging

Generates detailed logs for all the microservices and allow users to push it to their own logging services.

Distributed Tracing

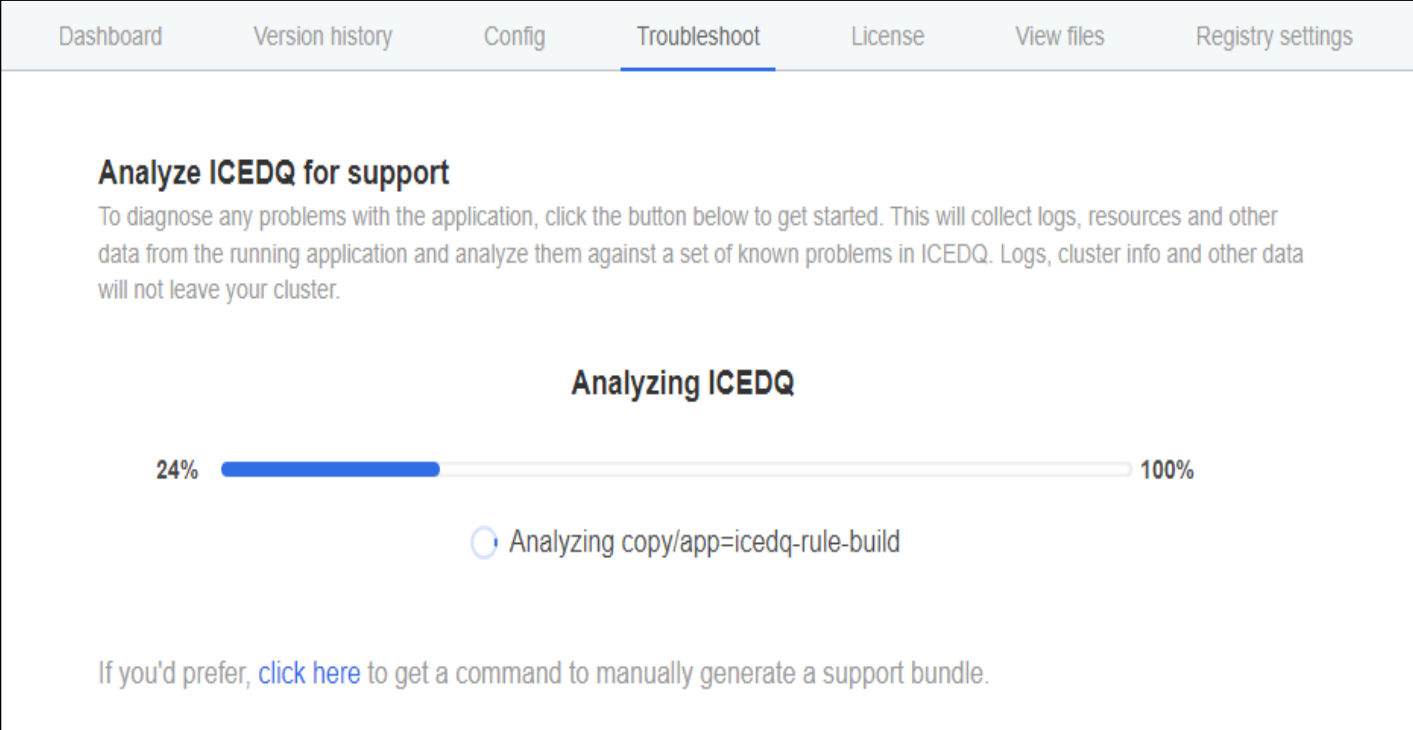
Advance logging and tracing mechanism to track issues across microservices

Support Bundles

Generate support bundle with a click of a button and send it to Torana team for quick analysis and resolution.

System Monitoring

Get a central dashboard to monitor resources of the Kubernetes cluster and stay on top of the system issues.



The screenshot shows a web interface with a navigation bar at the top containing links for Dashboard, Version history, Config, Troubleshoot (which is the active page), License, View files, and Registry settings. The main content area is titled 'Analyze ICEDQ for support' and includes a descriptive paragraph: 'To diagnose any problems with the application, click the button below to get started. This will collect logs, resources and other data from the running application and analyze them against a set of known problems in ICEDQ. Logs, cluster info and other data will not leave your cluster.' Below this text is a progress bar labeled 'Analyzing ICEDQ' showing 24% completion. A status indicator below the bar shows a blue circle with a white dot and the text 'Analyzing copy/app=icedq-rule-build'. At the bottom of the section, there is a link: 'If you'd prefer, [click here](#) to get a command to manually generate a support bundle.'

Data Testing

Rules

UI/ UX Overhaul

Now businesses and technical users can start creating optimized Rules with minimum training.

Rules – Low Code/ No Code

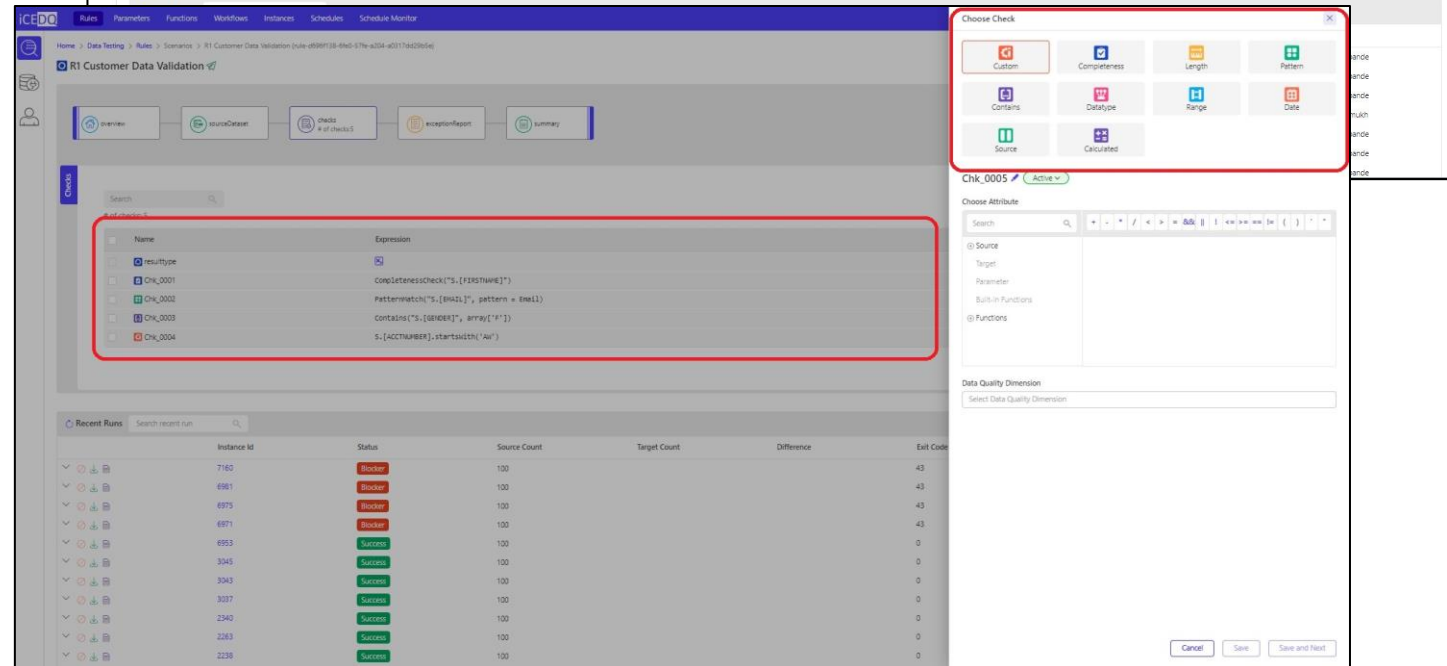
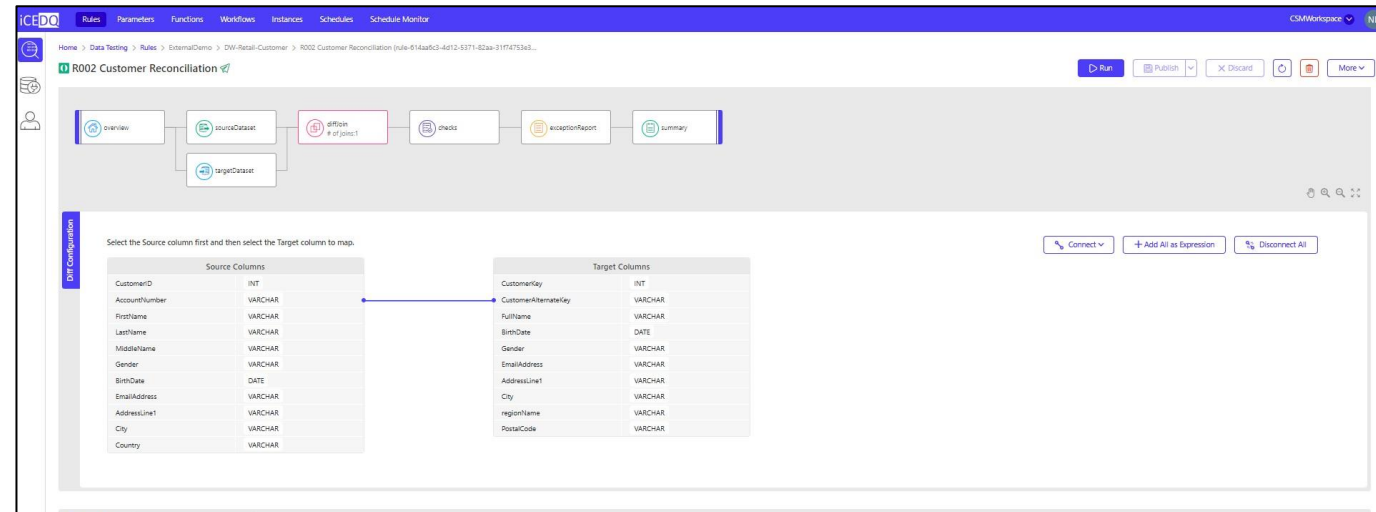
Click and configure out-of-box Rules for Duplicate checks, Count checks, and more scenarios from an expanding library.

Checks – Low Code/ No Code

Click and configure out-of-box Checks for Completeness, Pattern, Conditional, and many more scenarios from an expanding library.

Easier Maintenance

Keep working on a Rule for multiple days across sessions using the Draft mode and track each change using Versioning.



Rules

Query Designer

Auto SQL Query generation for databases to reduce the effort required

Scripting Rule

For those 20% corner cases, use Groovy scripts to perform pre- or post-processing logic, such as fetching values from a reference database and passing them as parameters to other rules.

User Defined Functions

Create User Defined Functions in the workspace through UI or REST APIs.

Rest APIs

API First application. APIs for rule creation, execution, user, and connection creation.

The screenshot shows the 'Query Designer' interface for a rule named 'Rule_1691651093'. On the left, a 'Table/View' pane lists various tables from the 'dbo' schema, including 'dbo.country', 'dbo.CS_Data', 'dbo.cteClaims', 'dbo.Cus', 'dbo.cust', 'dbo.Cust123456789', 'dbo.Customer', 'dbo.CUSTOMER01', 'dbo.Customer1', 'dbo.CustomerAddress', 'dbo.CustomerAddress_Issue', 'dbo.CustomerCache', 'dbo.CustomerCache_data', 'dbo.Customerdata', 'dbo.Customerdata1', and 'dbo.CustomerDemo'. A red callout points to this list, stating: 'Users can view all the tables in the schema selected (in schema field)'. In the center, a 'SQL Wizard' pane shows a visual query builder with two tables, 'Customerdata (dbo)' and 'CustomerAddress (dbo)', connected by a join line. A red callout points to this area, stating: 'User has to drag and drop the tables and columns and apply join.'. Below the visual builder, a table lists the query's components:

Visible	Expression	Column Name	Sorting	Sort Order	Aggregate	Groupin...	Criteria
<input checked="" type="checkbox"/>	dbo.Customerdata.GENDER		Ascending	1			

A red callout points to this table, stating: 'User can select the columns and apply sorting, aggregate functions and where clause'. At the bottom, the generated SQL query is displayed:

```
Select dbo.Customerdata.GENDER
From dbo.Customerdata
Inner Join dbo.CustomerAddress On dbo.Customerdata.CUSTOMERID =
dbo.CustomerAddress.CustomerID
Order By dbo.Customerdata.GENDER
```

A red callout points to the SQL text, stating: 'Based on the tables and joins applied, query will be visible below. The same query will be used to process the rule.'

The screenshot shows the 'Functions' interface. On the left, there is an 'Advance Search' section with a search for 'username' and a list of users: 'Abhilash Shriv', 'Dan Lindstedt', 'Demo Userone', 'Difraz Kulkarni', 'Dipaali Bhadury', 'Contributor Denny', 'Executor Denny', and 'Owner Denny'. The main area displays a table of functions:

Function Name	Function Class	Last Updated
fn_ShowUDFs	ShowUDFs	7/25/2023, 10:10:23 AM
fn_Pk-Detector		7/21/2023, 10:54:44 AM
fn_HelloWorld		9/22/2023, 12:39:41 PM

A red box highlights the three function entries in the table.

Workflow

Orchestrate

Create Workflows to orchestration execution of Datasets, Rules and Scripts to achieve end-to-end test automation.

Sequential

Users can configure the Workflow trigger these tasks in a sequential manner.

Parallel*

Users can configure the Workflow to trigger these tasks parallelly.

Runtime Overrides

Trigger workflows externally using APIs and override connections, parameters and variables at runtime.

The screenshot displays the iCEDQ interface for configuring a workflow named CW001. The workflow is shown as a sequence of three tasks: START, S001-Script basic rule, R010 Count Customers, and Rule_1661970404, connected by SFE (Sequential Flow) arrows. Below the diagram is a table titled 'Rules And Datasets' with the following data:

Sequence	Rule/Dataset Name	S	F	E	Type	Source C...
1	S001-Script basic rule	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Script	
2	R010 Count Customers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Checksum	FlatFile-... ↔
3	Rule_1661970404	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Recon	Postgres... ↔

iCEDQ vs Others

Architecture

Feature	iCEDQ	Other Products
Application	Microservice architecture that enables scaling based on customer usage.	Monolithic architecture that is not easy to maintain or scale.
Standalone Engine	Processes data in-memory that can scale with “n” number of tests and volume of data.	Loads data into a database that limits it from scaling for high volume data and number of tests.
Cluster Engine	Processes data in EMR, Databricks or Cloudera spark cluster.	Not available.
Data Issue Repository	Uses elastic storage (S3, Blob, NAS) for store high volume and historical data in binary format using parquet.	Stores data in a database so storing high volume and historical data is a bottleneck in application performance.
Scalability	Auto scale based on customer usage by deploying in any Kubernetes Cluster.	Not available
Deployment	GitOps deployment on AKS, EKS, GKE, OpenShift or any LINUX VM.	Deploys only on Windows Server. GitOps not supported.

Security

Feature	iCEDQ	Other Products
RBAC	Multi-tenant access for departments & BU's. Separation of duties for Admin & Other users.	Single tenant access controls and only admins can create connections.
Encryption	Data is encrypted in transit & rest. Uses KEK at rest with ability for customers to BYOK.	Data is not encrypted at rest.
Auth Protocol	OAuth 2.0	OAuth 2.0
LDAP & SSO	Supported	Supported
User Credential Profile	Each user can manage their own credentials against a connection. Adds an extra security layer.	Not Available. Connection credentials are shared by all the users.
Data Copy	Compliant: Data is only processed in memory not copied.	Not Compliant: All data is loaded and stored in their database repository.

Application Monitoring

Feature	iCEDQ	Other Products
System Monitoring	Centralized Prometheus Dashboard to monitor all the systems.	Not available.
Logging	Push logs to customer log monitoring applications.	Not available.
Support Bundles	Enable automatic redaction from log files before generating support bundles.	Not available.

Data Testing

Feature	iCEDQ	Other Products
Rules – Low Code/ No Code	Supported	Supported
Checks – Low Code/ No Code	Supported	Supported
Scripting	Create advance pre/ post processing scripts for end-to-end automation.	Not available.
User Defined Functions	Create complex UDF's and create your own library using Java/ Groovy.	Not available.
Workflows	Create conditional or sequential task executions of tests.	Only support sequential execution.
Datasets	Join access data sources and create a single virtualized data set. Supported.	Supported.

Data Testing

Feature	iCEDQ	Other Products
Data Issue Visualization	Creates one single exception report that shows issues column-by-column.	Create separates reports that shows issues row-by-row.
Parameterization	Supported	Supported
Query Designer	Supported	Supported
Rest API	All: Rest APIs available for everything action.	Limited: Only available for execution.

Dashboards

Feature	iCEDQ	Other Products
Integrated DW	Provides an out-of-box data warehouse which is used for dashboard & reporting.	Not available.
Out Of Box Dashboards	Supported	Supported
Build your Own Dashboards	Customers can use any of their favorite reporting tool (Tableau, PowerBI, Qlik) to generate custom dashboards using the integrated DW.	Not available.

Future Releases

Data Observability & Monitoring

Table Monitors

Create rules and checks against tables/ views to continuously monitor data issues in production environment.

Anomaly Detection (AI / ML /)

A new engine that continuously captures table metrics and helps identify anomalies in the data without having manually create checks.

Data Profiling

Profile the table on-demand or continuously to help understand the data better and to create checks.

DQ Dimension Reporting

Measure data quality of the table using pre-defined DQ dimensions.

Task Management

Requirements & Test Cases

Manage requirements, test cases and links Rules to get complete traceability for QA reporting.

Task Management

Assign task for creating Rules, Workflows and other entities and track progress.

Incident Workflow

Open tickets on Rule failures and manage the workflow towards issue resolution.

Asset Library

Metadata

Centralized repository of metadata of all the data sources, rules, results, tags etc.

Lineage

Captures the relation ship between all the entities and displays the lineage overlapped with data issues.

Business Glossary

Allows users to create glossary of business terms.