



Overview

VERA is a local SQL development and analysis tool designed for Vertica databases. It provides an intuitive interface for writing SQL, browsing schemas, running analysis tools, and leveraging a local AI model to assist with query generation and insights. This document introduces the application's main features, workflow, and built-in analysis tools.

License & Disclaimer

Development: Vera was developed by **Maya Goldberg** via **AI tools** during design and implementation.

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The image shows a login screen for a system called VERA. The background is a dark blue color with a faint, dotted world map. In the center, the word "VERA" is written in large, bold, capital letters. Each letter is composed of a grid of small, colored dots in shades of orange, yellow, green, and white. Below the logo, there is a dark grey rectangular box with rounded corners. Inside this box, there are two horizontal input fields. The top field is labeled "Login" and the bottom field is labeled "Continue without Login".

VERA

Login

Continue without Login

The VERA login screen allows defined users to log in or create a new VERA user on the local PC.

The screenshot displays the LM Studio application window. At the top, a yellow callout box labeled "(1) Load the AI Model" points to the "Select a model to load" button. Below this, the "Model Information" panel on the right shows the selected model: "TheBloke/CodeLlama-70B-Instruct-GGUF" with file "sqlcoder-70b-alpha-Q4_K_M.gguf". The "Format" is set to "GGUF", "Quantization" to "Q4_K_M", "Arch" to "llama", and "Domain" to "llm". The "Size on disk" is 41.42 GB. The "API Usage" section shows the model's API identifier as "codellama-70b-instruct@q4_k_m" and a warning: "The local server is not running. Start the server to be able to access the model through the API".

In the center, a yellow callout box labeled "(2) Run the AI Model" points to the "Status: Running" toggle switch. The main interface shows the model is currently "LOADING 66.34%". The "Status: Stopped" toggle is visible above the loading progress. The "Server not running" message is displayed on the right. The "Supported endpoints (OpenAI-like)" section lists the following endpoints:

- GET /v1/models
- POST /v1/chat/completions
- POST /v1/completions

The bottom status bar shows "LM Studio 0.3.28 (Build 2)" and system resources: "RAM: 389.23 MB | CPU: 4.68 %".

Recommended (but not mandatory) if you use your own on-premise AI model:

Download **LM Studio** from <https://lmstudio.ai>

In LM Studio, select a model that offers a good balance between quality and latency, supports long context lengths and performs well for schema-aware SQL tasks, for on-premise use.

Recommended model: **Qwen2.5-Coder-14B-Instruct-Q4_K_M.gguf**

The background of the slide features a dark blue world map composed of small dots. Overlaid on the map is the word "VERA" in a large, stylized font. Each letter of "VERA" is formed by a grid of small, multi-colored dots in shades of orange, yellow, green, and white.

VERA

Username

dbadmin

Password

.....

Login

Cancel

Create user

The VERA username and password you create are not necessarily the same as those used to connect to the database, though you may choose to reuse them.

Filter

Database EEVDB

Schemas (1008)

Stored Procedures (14)

System Tables (243)

Settings

User Setup

Editor Setup

Local files folder (Vera)

C:\Users\mogo5\Documents\DELME\VERA01\VERA

Choose...

vsq client path

C:\Program Files\Vertica Systems\VSQ64\vsq.exe

Choose...

Host

10.10.10.35 <<<<<<<< The IP address of your Vertica cluster initiator node

Database

MYDB <<<<<<< The Database name

User

dbadmin <<<<<<< The Vertica username (not necessarily the same as the VERA username)

Password

..... <<<<<<<< Vertica user passwd (not necessarily the same as the VERA user passwd)

Test DB connection

Local AI model address

http://127.0.0.1:1234/v1

Test AI Connection

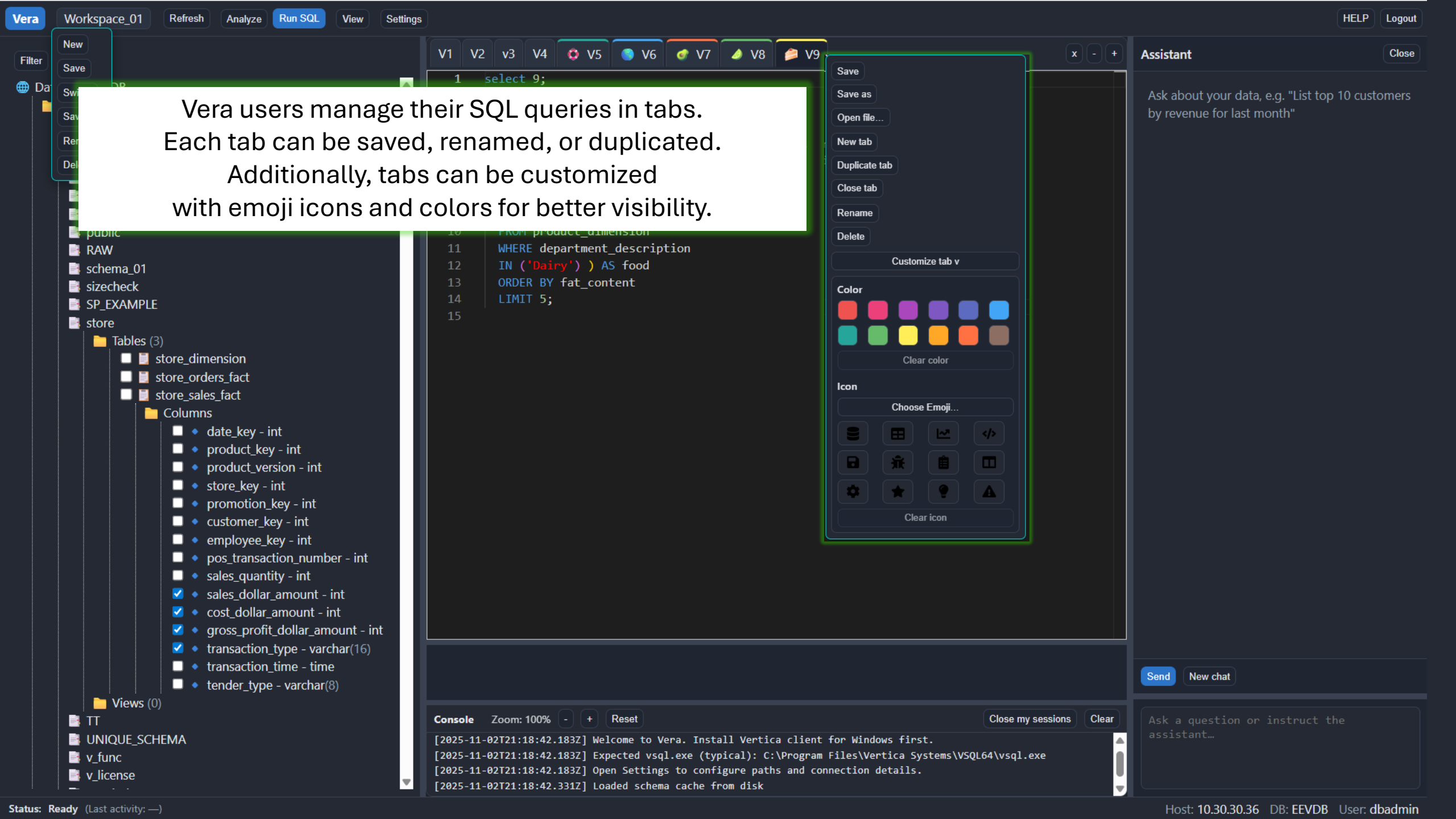
OpenAI-compatible base URL (LM Studio, llama.cpp). Leave empty to disable. The app appends /chat/completions (and /models for testing).

Account

Create VERA user from these settings

Cancel

Save



Vera users manage their SQL queries in tabs.
Each tab can be saved, renamed, or duplicated.
Additionally, tabs can be customized
with emoji icons and colors for better visibility.

Assistant

Ask about your data, e.g. "List top 10 customers
by revenue for last month"

Send

New chat

Ask a question or instruct the
assistant...

Console Zoom: 100% - + Reset

Close my sessions

Clear

```
[2025-11-02T21:18:42.183Z] Welcome to Vera. Install Vertica client for Windows first.  
[2025-11-02T21:18:42.183Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSQL64\vsql.exe  
[2025-11-02T21:18:42.183Z] Open Settings to configure paths and connection details.  
[2025-11-02T21:18:42.331Z] Loaded schema cache from disk
```

Vera

Workspace_01

Refresh

Analyze

Run SQL

View

Settings

Filter

Da

New

Save

Switch

Save As

Rename

Delete

DB

(1008)

O01

EM

ome_sales

performance

pol

public

RAW

schema_01

sizecheck

SP_EXAMPLE

store

Tables (3)

store_dimension

store_orders_fact

store_sales_fact

Columns

date_key - int

product_key - int

product_version - int

store_key - int

promotion_key - int

customer_key - int

employee_key - int

pos_transaction_number - int

sales_quantity - int

sales_dollar_amount - int

cost_dollar_amount - int

gross_profit_dollar_amount - int

transaction_type - varchar(16)

transaction_time - time

tender_type - varchar(8)

Views (0)

TT

UNIQUE_SCHEMA

v_func

v_license

V1

V2

v3

V4

V5

V6

V7

V8

V9

x

-

+

1

select 9;

Assistant

Close

Ask about your data, e.g. "List top 10 customers by revenue for last month"

Send

New chat

Ask a question or instruct the assistant...

Console

Zoom: 100%

-

+

Reset

Close my sessions

Clear

[2025-11-02T21:18:42.183Z] Welcome to Vera. Install Vertica client for Windows first.

[2025-11-02T21:18:42.183Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSQL64\vsq.exe

[2025-11-02T21:18:42.183Z] Open Settings to configure paths and connection details.

[2025-11-02T21:18:42.331Z] Loaded schema cache from disk

Status: Ready

(Last activity: —)

Host: 10.30.30.36

DB: EEVDB

User: dbadmin

➤ Vertica users can save and manage their SQL statements in different tab groups, called Workspaces.

A Vera user can create multiple workspaces, each with a unique name, which are saved locally on the PC.

New Workspace

Enter a new workspace name:

My New Workspace Name

Cancel

Create Workspace

VeraWorkspace_01RefreshAnalyzeRun SQLViewSettingsHELPLogout

FilterDatabase EEVDBSchemas (1008)DEMO01fooKEDEMonline_salesTables (3)call_center_dimensiononline_page_dimensiononline_sales_factViews (0)performance_testpolpublicRAWschema_01sizecheckSP_EXAMPLEstoreTTUNIQUE_SCHEMAv_funcv_licensev_txtindexz_schema_10z_schema_100z_schema_1000z_schema_101z_schema_102z_schema_103z_schema_104z_schema_105z_schema_106z_schema_107z_schema_108z_schema_109z_schema_11z_schema_110

Schema Tree Actions

online_sales_factonline_sales.online_sales_fact

Projections

SELECT a sample

Data entry

V1V2V3x-+

1SELECT * FROM "online_sales"."online_sales_fact" ORDER BY 1 LIMIT 1000;

2

_date_key	ship_date_key	product_key	product_version	customer_key	call_center_key	online_sales_fact
1	3	2290	4	90088	9330	
1	3	2316	2	76346	6224	
1	3	3083	1	93593	9795	
1	4	2418	1	7140	3082	
1	4	2161	1	29081	7855	
1	5	2177	5	49975	1210	
1	2	2679	3	40422	1425	
1	5	1607	1	48097	2261	
1	5	1607	1	48097	2261	
1	5	3019	1	40276	1940	
1	4	3311	1	56450	9704	
1	4	1671	1	99703	9898	
1	5	3325	1	14149	7404	
1	3	1640	1	47908	1974	
1	3	181	3	36482	8368	
1	2	1703	1	07804	252	

ConsoleZoom: 100%-+ResetClose my sessionsClear

[2025-10-09T21:45:41.437Z] Welcome to Vera. Install Vertica client for Windows first.
[2025-10-09T21:45:41.438Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSQL64\vsql.exe
[2025-10-09T21:45:41.438Z] Open Settings to configure paths and connection details.
[2025-10-09T21:45:41.501Z] Loaded schema cache from disk
[2025-10-09T21:45:49.588Z] Starting schema refresh...
[2025-10-09T21:45:49.588Z] Using vsql host=10.30.30.36 db=EEVDB user=dbadmin pw=***
[2025-10-09T21:45:52.541Z] vsql exit code: 0

AssistantClose

Ask about your data, e.g. "List top 10 customers by revenue for last month"

SendNew chat

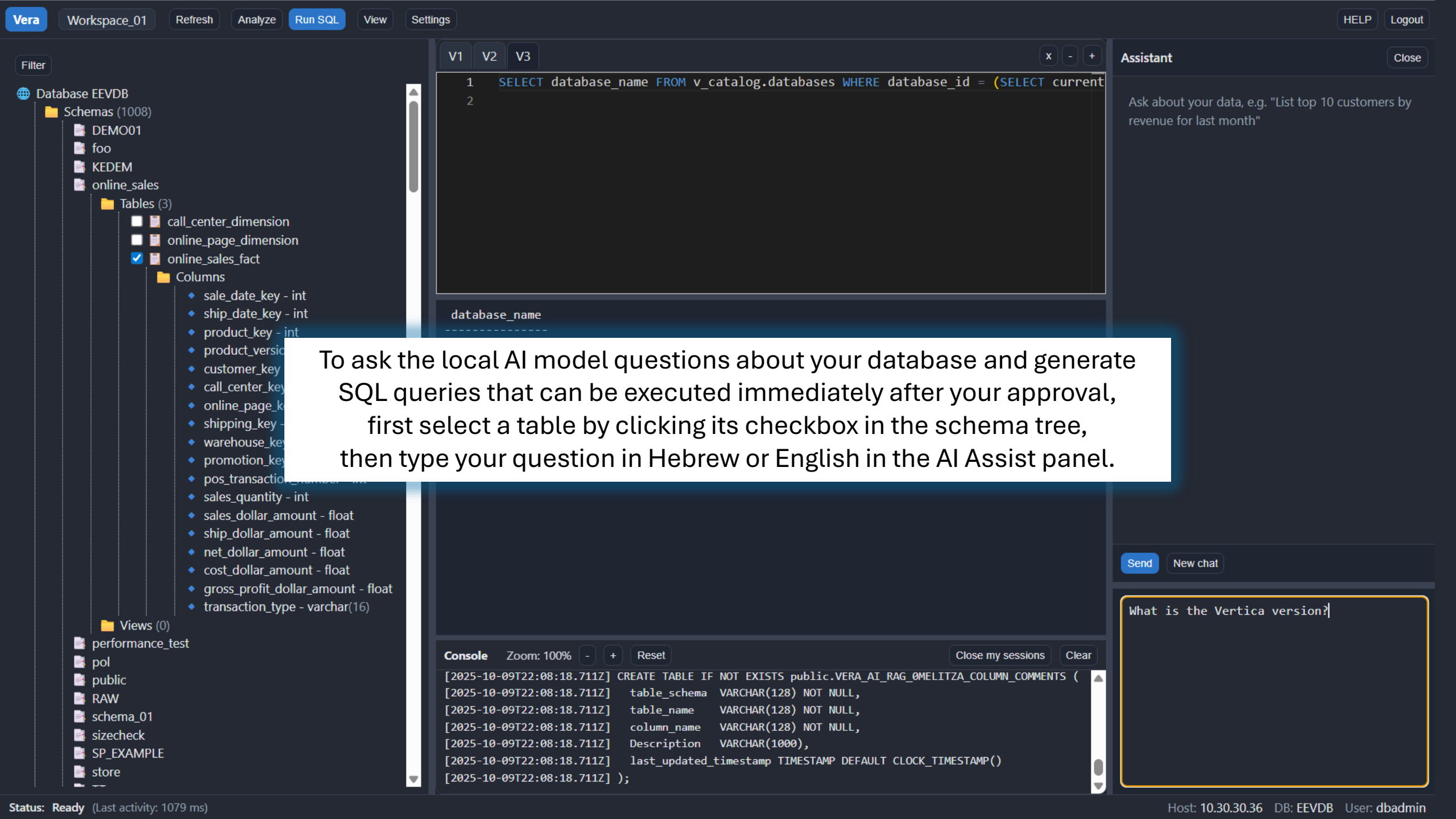
Ask a question or instruct the assistant...

Status: Ready (Last activity: 1800 ms)Host: 10.30.30.36 DB: EEVDB User: dbadmin

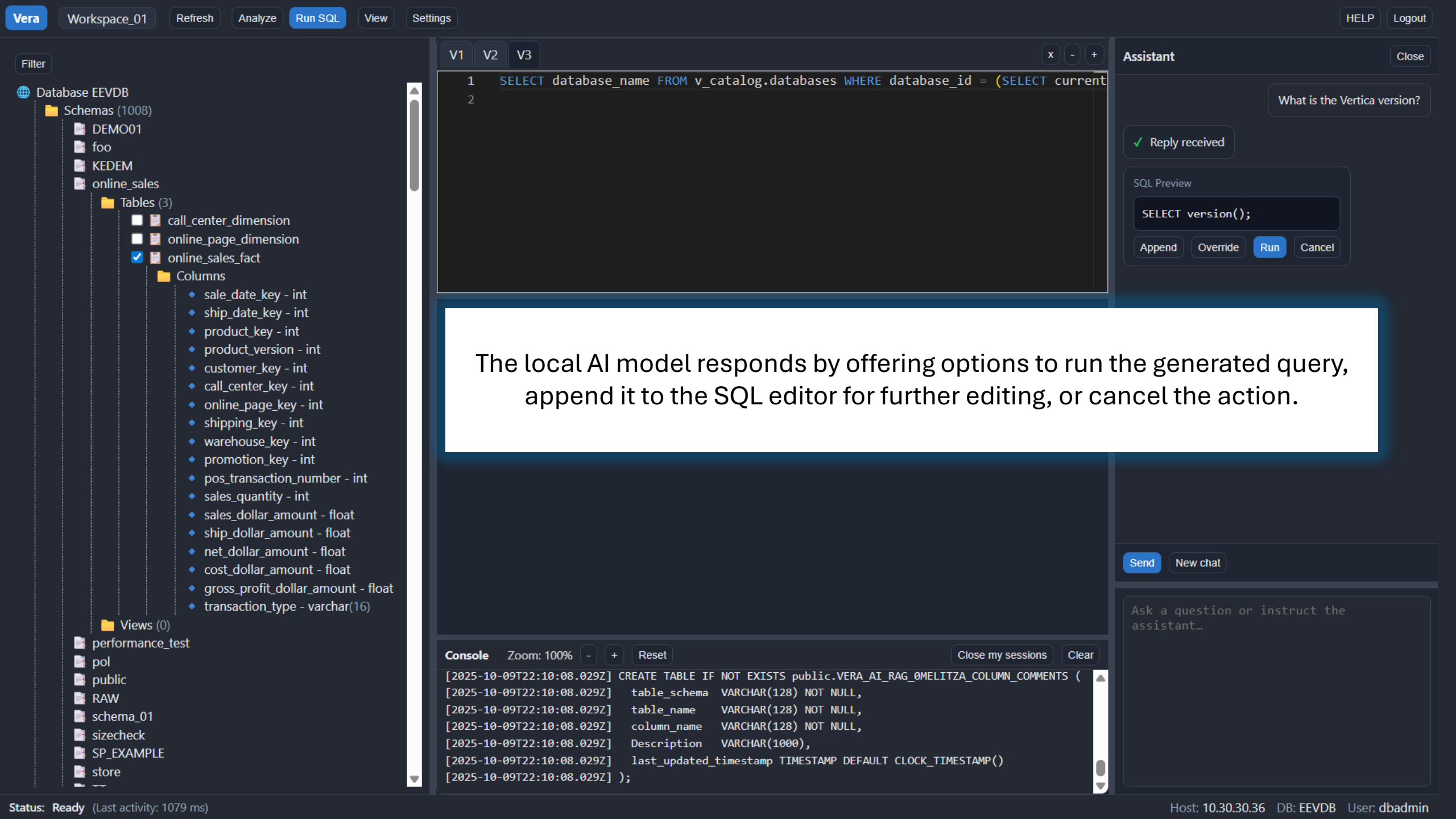
Load to DB Open file Save to file | Add line Duplicate line Remove line

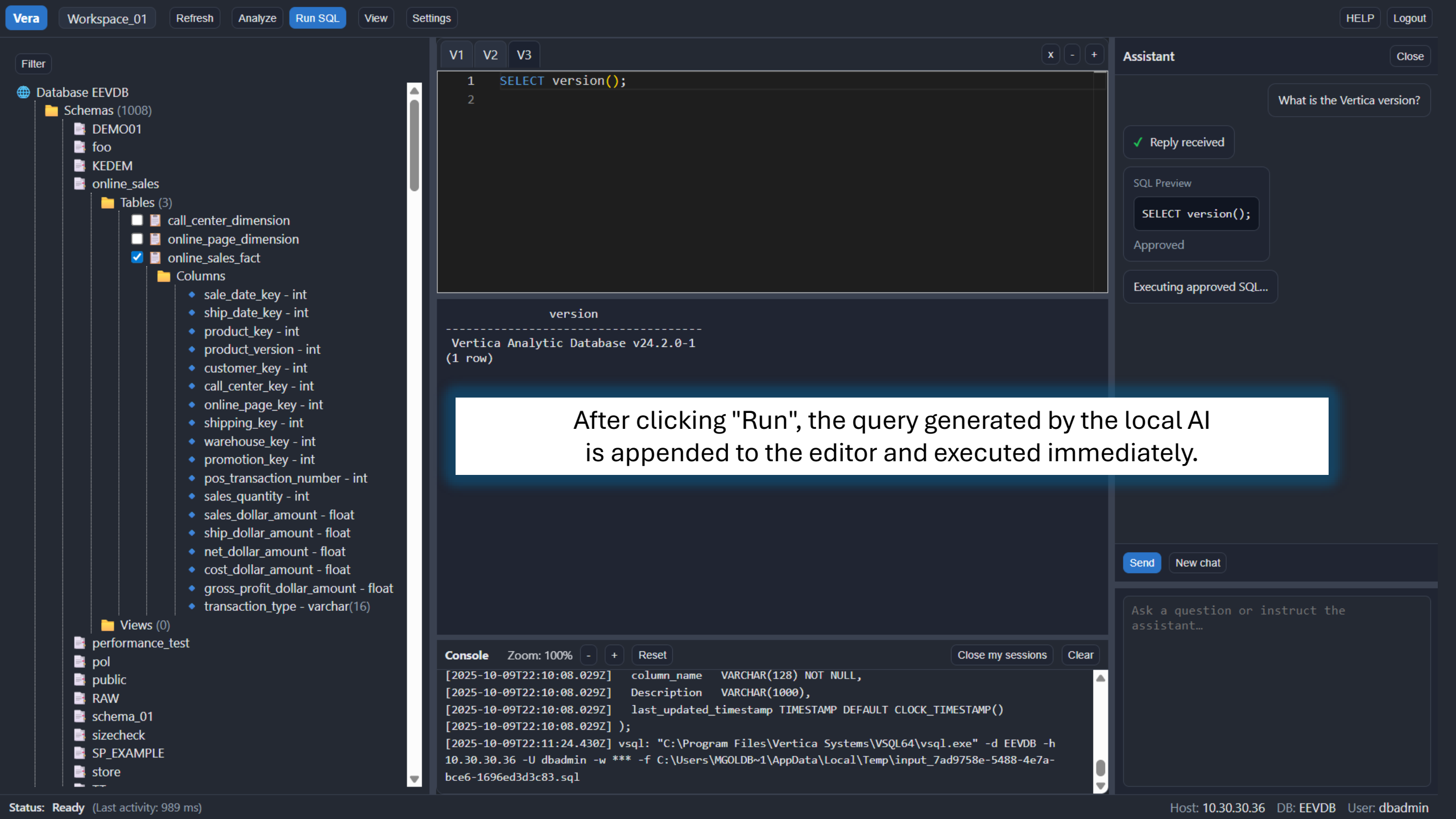
sale_date_key — int	ship_date_key — int	product_key — int	product_version — int	customer_key — int	call_center_key — int	online_page_key — int	shipping_key — int	warehouse_key — int	promotion_key —
1	2	3	4	5	6	7	8	9	10

To load data to a table in the database,
Right-click the table in the schema tree and select "Data entry"



To ask the local AI model questions about your database and generate SQL queries that can be executed immediately after your approval, first select a table by clicking its checkbox in the schema tree, then type your question in Hebrew or English in the AI Assist panel.





After clicking "Run", the query generated by the local AI is appended to the editor and executed immediately.

Vera

Workspace_01

Refresh

Analyze

Run SQL

View

Settings

HELP

Logout

Filter

Database EEVDB

- Schemas (1008)
 - DEMO01
 - foo
 - KEDEM
 - online_sales
 - Tables (3)
 - call_center_dimension
 - online_page_dimension
 - online_sales_fact
 - Columns
 - Schema Tree Actions
 - online_sales_fact
 - online_sales.online_sales_fact
 - Projections
 - SELECT a sample
 - Data entry
 - sale_date - int
 - ship_date - int
 - product_key - int
 - product_version - int
 - customer_key - int
 - call_center_key - int
 - online_page_key - int
 - shipping_key - int
 - warehouse_key - int
 - promotion_key - int
 - pos_transaction_number - int
 - sales_quantity - int
 - sales_dollar_amount - float
 - ship_dollar_amount - float
 - net_dollar_amount - float
 - cost_dollar_amount - float
 - gross_profit_dollar_amount - float
 - transaction_type - varchar(16)
- Views (0)
 - performance_test
 - pol
 - public
 - RAW
 - schema_01
 - sizecheck
 - SP_EXAMPLE
 - store

V1V2V3

12345678

SELECT
pc.TABLE_SCHEMA,
pc.TABLE_NAME,
p.projection_name,
pc.table_column_name AS column_name,
pc.DATA_TYPE,
pc.ENCODING_TYPE,
pc.sort_position AS ORDER_BY,

CREATE PROJECTION online_sales.online_sales_fact /*+createtype(L)*/

When a user right-clicks on one of the tables in the tree ...

- Copy and paste the schema and/or table name to the editor
- See projection details for the selected table
- Automatically execute select * from selected_table limit 1000;
- Open the generated screen for data entry activities for the selected table

sales_dollar_amount,
ship_dollar_amount,
net_dollar_amount,
cost_dollar_amount,
gross_profit_dollar_amount,
transaction_type
)
AS
SELECT online_sales_fact.sale_date_key,
online_sales_fact.ship_date_key,
online_sales_fact.product_key,
online_sales_fact.product_version,
online_sales_fact.customer_key,
online_sales_fact.call_center_key,
online_sales_fact.online_page_key,
online_sales_fact.shipping_key,
online_sales_fact.warehouse_key,
online_sales_fact.promotion_key,
online_sales_fact.pos_transaction_number

ConsoleZoom: 100%+Reset

Close my sessionsClear

[2025-10-09T22:10:08.029Z]);
[2025-10-09T22:11:24.430Z] vsal: "C:\Program Files\Vertica Svstems\VSOL64\vsal.exe" -d EEVDB -h

Assistant

Close

What is the Vertica version?

✓ Reply received

SQL Preview

SELECT version();

Approved

Improved SQL...

SendNew chat

Ask a question or instruct the assistant...

Status: Ready (Last activity: 1583 ms)

Host: 10.30.30.36 DB: EEVDB User: dbadmin

Vera

Workspace_01

Refresh

Analyze

Run SQL

View

Settings

HELP

Logout

Filter

Database EEVDB

Schemas (1008)

DEMO01

foo

KEDEM

online_sales

performance_test

pol

public

RAW

schema_01

sizecheck

SP_EXAMPLE

store

Tables (3)

☒ store_dimension

Columns

store_orders_fact

store_sales_fact

Views (0)

TT

UNIQUE_SCHEMA

v_func

v_license

v_txtindex

z_schema_10

z_schema_100

z_schema_1000

z_schema_101

z_schema_102

z_schema_103

z_schema_104

z_schema_105

z_schema_106

z_schema_107

z_schema_108

z_schema_109

z_schema_11

z_schema_110

V1

V2

v3

V4

V5

V6

V7

V8

V9

x

-

+

1 -- vmart_query_02.sql

2 -- WHERE clause subquery

3 -- Asks for all orders placed by stores located in Massachusetts

4 -- and by vendors located elsewhere before March 1, 2003:

5 SELECT 2;

6 SELECT

7 SELECT

8 order store_dimension.annual_shrinkage

9 date store_dimension.financial_service_type

10 FROM store_dimension.first_open_date

11 store store_dimension.floor_plan_type

12 WHERE store_dimension.foot_traffic

13 order store_dimension.last_remodel_date

14 SEL store_dimension.monthly_rent_cost

15 s store_dimension.number_of_employees

16 FRO store_dimension.photo_processing_type

17 s store_dimension.selling_square_footage

18 WHE store_dimension.store_address

19 store_state = 'MA'

20)

21 AND orders.vendor_key NOT IN (

22 SELECT

Assistant

Close

Ask about your data, e.g. "List top 10 customers by revenue for last month"

Send

New chat

Ask a question or instruct the assistant...

Console

Zoom: 100%

-

+

Reset

Close my sessions

Clear

[2025-11-02T21:18:42.183Z] Welcome to Vera. Install Vertica client for Windows first.

[2025-11-02T21:18:42.183Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSQ64\vsql.exe

[2025-11-02T21:18:42.183Z] Open Settings to configure paths and connection details.

[2025-11-02T21:18:42.331Z] Loaded schema cache from disk

Status: Ready

(Last activity: —)

Host: 10.30.30.36

DB: EEVDB

User: dbadmin

When the “Tables from schema tree” checkbox is selected, and an SQL statement is written in the editor, the editor will suggest autocomplete options primarily related to the selected tables.

Vera

Workspace_01

Refresh

Analyze

Run SQL

View

Settings

HELP

Logout

Filter

Database EEVDB

Schemas (1008)

DEMO01

foo

KEDEM

online_sales

Tables (3)

call_center_dimensi

online_page_dimen

online_sales_fact

Views (0)

performance_test

pol

public

RAW

schema_01

sizecheck

SP_EXAMPLE

store

TT

UNIQUE_SCHEMA

v_func

v_license

v_txtindex

z_schema_10

z_schema_100

z_schema_1000

z_schema_101

z_schema_102

z_schema_103

z_schema_104

z_schema_105

z_schema_106

z_schema_107

z_schema_108

z_schema_109

z_schema_110

V1

V2

V3

1

2

3

4

5

6

7

8

SELECT

pc.TABLE_SCHEMA,

pc.TABLE_NAME,

p.projection_name,

pc.table_column_name AS column_name,

pc.DATA_TYPE,

pc.ENCODING_TYPE,

pc.sort_position AS ORDER_BY,

sale_date_key

ship_date_key

product_key

product_version

customer_key

call_center_key

online_page_key

shipping_key

warehouse_key

promotion_key

		2290	4	90088	9330	53	58118	94	62
		2316	2	76346	6224	882	91102	74	70
		3083	1	93593	9795	560	2914	96	
		2418	1	7140	3082	807	90964	94	80
		331	3	11809	4493	141	60103	54	90
		1323	4	32721	1885	634	47082	86	29
		2501	1	39839	28	259	77029	21	95
		822	1	40657	6623	970	83819	95	63
		2161	1	29081	7855	22	24081	18	2
				49975	1210	950	5805	54	9
				40422	1425	316	40052	37	39
				48097	2261	383	558	89	38
				48097	2261	383	558	89	38
				40276	1940	516	48312	12	38
				56450	9704	517	35244	43	27
				99703	9898	927	45918	72	31
				14149	7404	999	79221	51	68
				47908	1974	558	53323	61	54
				36482	8368	259	74242	10	89
				87804	253	138	34722	56	39
				60166	8650	507	37734	59	38
				288	6879	257	52362	47	82
				77474	4898	557	21845	65	10
				46370	167	437	48922	81	64
				63924	7744	899	13571	48	20
				93853	6455	427	64440	81	43
				57569	9672	883	22017	95	40
				19135	6415	934	47377	27	82
				38045	3539	150	15619	84	92
				58339	4366	461	17128	82	23
				7181	5496	844	77079	59	89

Schema Tree Actions

online_sales_fact

online_sales.online_sales_fact

Projections

SELECT a sample

Data entry

➤

When a user right-clicks on one of the tables in the tree and choose SELECT a sample:
Vera will automatically execute
select * from selected_table limit 1000;
Here we can see afterward how it looks like...

Console

Zoom: 100%

-

+

Reset

Close my sessions

Clear

[2025-10-09T21:45:41.437Z]

Welcome to Vera. Install Vertica client for Windows first.

Status: Ready

(Last activity: 1676 ms)

Host: 10.30.30.36

DB: EEVDB

User: dbadmin

VeraWorkspace_01RefreshAnalyzeRun SQLViewSettingsHELPLogout

Filter

Database EEVDB

Schemas (1008)

DEMO01

foo

KEDEM

online_sales

Tables (3)

call_center_dimension

online_page_dimension

online_sales_fact

Columns

sale_date_key - int

ship_date_key - int

product_key - int

product_version - int

customer_key - int

call_center_key - int

online_page_key - int

shipping_key - int

warehouse_key - int

promotion_key - int

pos_transaction_number

sales_quantity

sales_dollar_amount

ship_dollar_amount

Views (0)

performance_test

pol

public

RAW

schema_01

sizecheck

SP_EXAMPLE

store

V1V2V3

1SELECT

2pc.TABLE_SCHEMA,

3pc.TABLE_NAME,

4p.projection_name,

5pc.table_column_name AS column_name,

6pc.DATA_TYPE,

7pc.ENCODING_TYPE,

8pc.sort_position AS ORDER_BY,

key	online_page_key	shipping_key	warehouse_key	promotion_key	pos_transaction_number	sales_quantity	sales_dollar_amount	ship_dollar_amount
30	53	58118	94	62	46	2	480	
24	882	91102	74	70	27	8	187	
95	560	2914	96	7	129	6	289	
82	807	90964	94	86	88	1	176	
93	141	60103	54	90	178	1	190	
85	634	47082	86	29	170	5	146	
28	259	77029	21	95	190	4	348	
23	970	83819	95	63	3	5	475	
55	22	24081	18	1	9	6	251	
10	950	5805	54	9	60	6	106	
25	316	40052	37	39	94	10	-317	
61	383	558	89	38	21	3	505	
61	383	558	89	38	21	3	505	
	516	48312	12	38	105	1	325	
	517	35244	43	27	128	6	279	
	927	45918	72	31	82	1	263	
	999	79221	51	68	48	6	271	
	558	53323	61	54	100	10	310	
							258	
							313	
							58	
							285	
							284	
							472	
							215	
44	899	13571	48	20	24	5	471	
55	427	64440	81	43	177	8	158	
72	883	22017	95	46	97	2	335	
15	934	47377	27	82	93	7	-135	
39	150	15619	84	92	44	4	229	
66	461	17128	82	23	103	8	422	
96	844	77079	59	89	97	5		

Schema Tree Actions

promotion_key

online_sales_fact.promotion_key

online_sales.online_sales_fact.promotion_key

Graph

ConsoleZoom: 100% - + Reset

Close my sessions

Clear

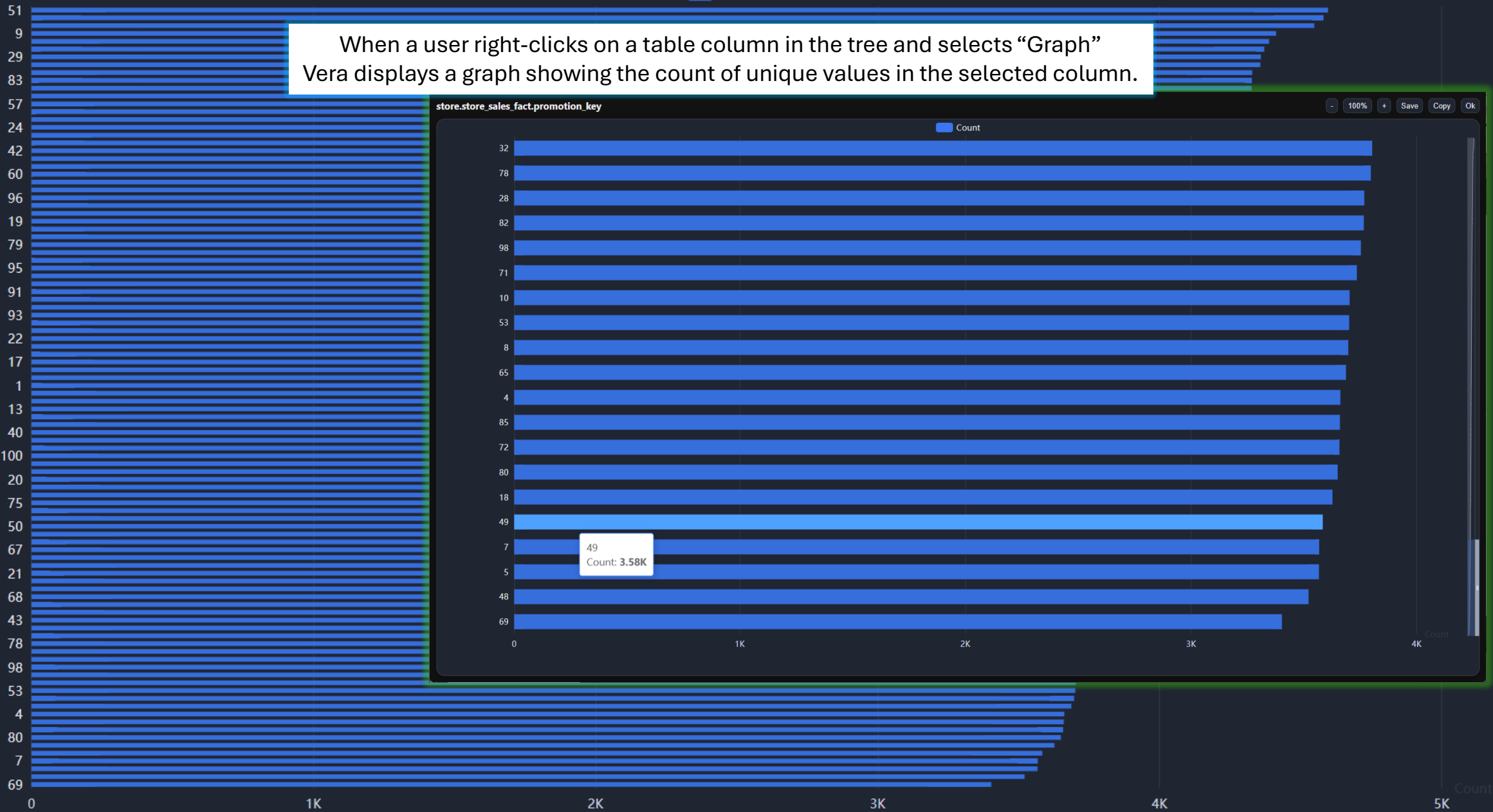
[2025-10-09T21:45:41.437Z] Welcome to Vera. Install Vertica client for Windows first.

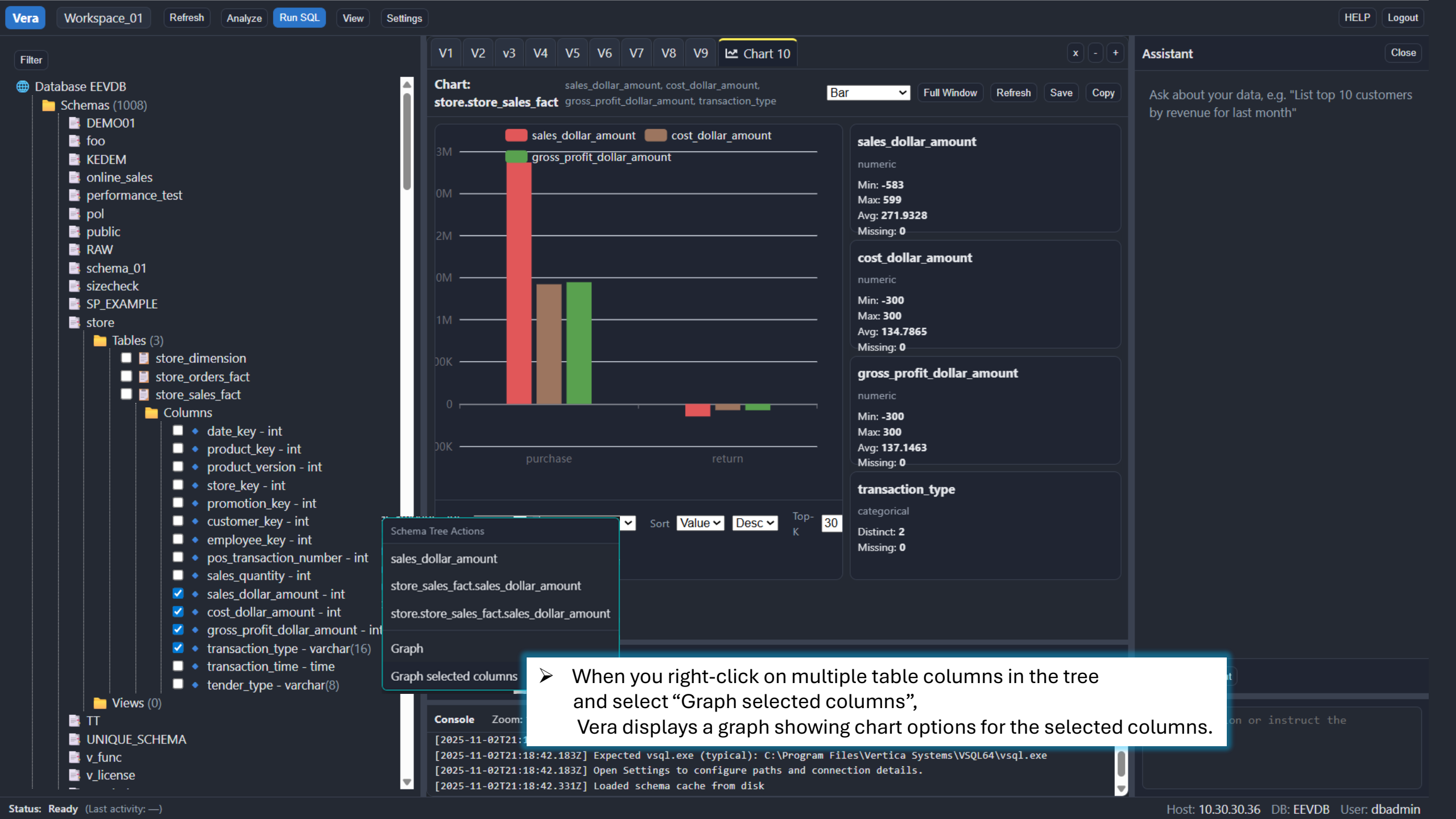
Status: Ready (Last activity: 1676 ms)

Host: 10.30.30.36 DB: EEVDB User: dbadmin

Count

When a user right-clicks on a table column in the tree and selects “Graph” Vera displays a graph showing the count of unique values in the selected column.





VeraWorkspace_01RefreshAnalyzeRun SQLViewSettingsHELPLogout

Filter*.product_dimension.*

Schema

Tableproduct_dimension

Column

OKCancel

product_key - int

product_version - int

product_description - varchar(128)

number - char(32)

category_description - char(32)

department_description - char(32)

package_type_description - char(32)

package_size - char(32)

fat_content - int

diet_type - char(32)

weight - int

weight_units_of_measure - char(32)

shelf_width - int

shelf_height - int

shelf_depth - int

product_price - int

product_cost - int

lowest_competitor_price - int

highest_competitor_price - int

average_competitor_price - int

discontinued_flag - int

Views (0)

Stored Procedures (14)

System Tables (243)

V1V2V3V4V5V6V7V8V9Chart 10

1SELECT fat_content

7ORDER BY fat_content

8LIMIT 5;

TOP PERFORMANCE ISSUES

Performance Analysis

Issue:Analyzing Txn_ID: 45035996277478845 / Stmt_ID: 1 | Run Time: 2025-11-04 12:20:56

Assessment:INFO

Recommendation:This report analyzes the current profiled query.

Issue:Query Duration: .1 seconds

Assessment:GOOD

Recommendation:Review other findings for optimization opportunities.

Issue:Memory Used: 2,684.2 MB

Assessment:WARNING

Recommendation:High memory usage can lead to spills. Check for inefficient joins or aggregations.

Issue:Rows Processed:3,020

Assessment:WARNING

Recommendation:High ratio of processed to output rows suggests poor selectivity. Add more specific filters or improve projection design.

Issue:Spilled to Disk: No

Assessment:GOOD

Recommendation:Spills severely degrade performance. Increase memory for the resource pool or optimize the query.

Issue:AT QUERY TIME: Optimizer detected AUTO_PROJECTION_USED for The optimizer ran a query using auto-projections

Assessment:CRITICAL

Recommendation:Consider creating projections or run database designer on table public.product_dimension

Issue:Query contains potentially inefficient operators (e.g., IN, OR, NOT IN).

Assessment:WARNING

Recommendation:Use '=' and JOIN instead of IN, OR, NOT IN, or != to enable better join strategies.

(28 rows)

ConsoleZoom: 100%Reset

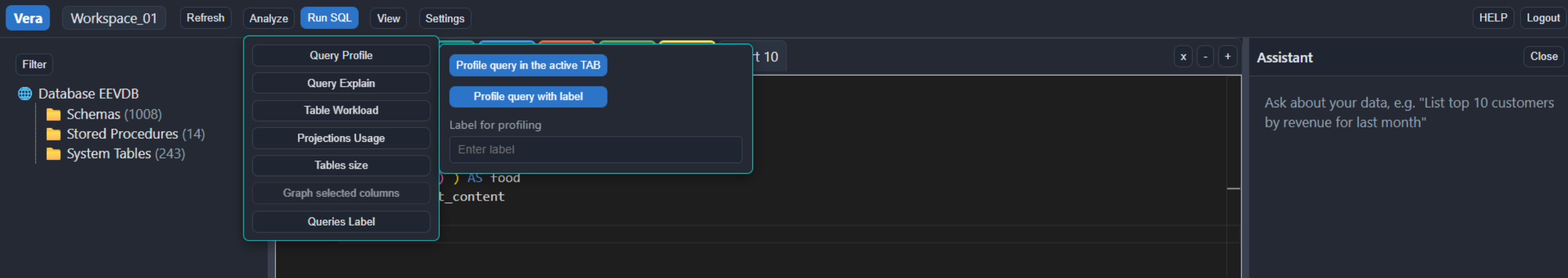
Close my sessionsClear

[2025-11-04T10:02:02.524Z] Welcome to Vera. Install Vertica client for Windows first.

[2025-11-04T10:02:02.526Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSOL64\vsql.exe

Status: Ready (Last activity: 10422 ms)Host: 10.30.30.36 DB: EEVDB User: dbadmin

➤ Here is an example of how to filter the schema tree to locate a specific Schema, Table, or Column.



The options for performing a query profile are:

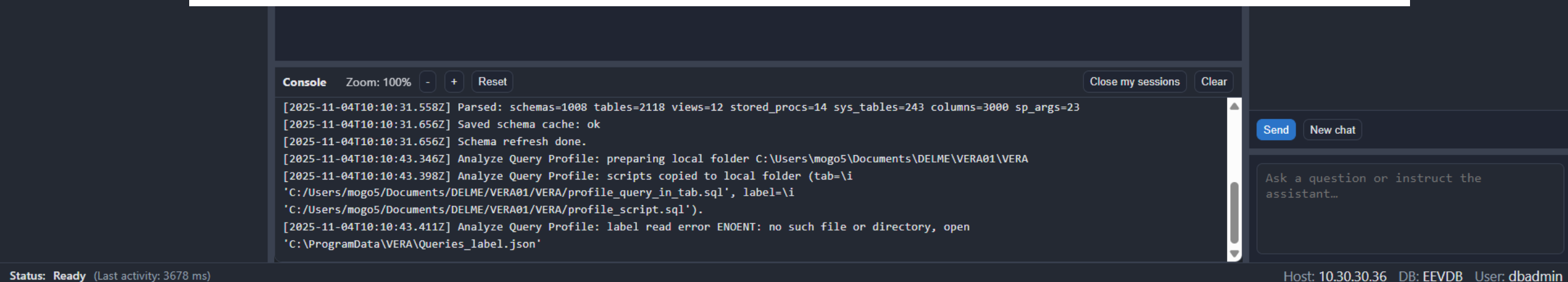
1) Query Profile in the active TAB:

Profiles the query currently displayed in the active tab without requiring a separate label.

2) Profile query with label:

Allows you to enter a label to identify the query to profile.

All EXPLAIN and PROFILE options are accessible under the Run SQL menu.



VeraWorkspace_01RefreshAnalyzeRun SQLViewSettings

Filter*.product_dimension.*

Database EEVDB

Schemas (1)

public

Tables (1)

product_dimension

Columns

product_key - intproduct_version - intproduct_description - varchar(128)sku_number - char(32)category_description - char(32)department_description - char(32)package_type_description - char(32)package_size - char(32)fat_content - intdiet_type - char(32)weight - intweight_units_of_measure - char(32)

V1V2v3V4V5V6V7V8V9Chart 10

1SELECT fat_content2FROM (3SELECT DISTINCT fat_content4FROM product_dimension5WHERE department_description6IN ('Dairy')) AS food7ORDER BY fat_content8LIMIT 5;

TOP PERFORMANCE ISSUES

Performance Analysis

Issue:Analyzing Txn_ID: 45035996277478845 / Stmt_ID: 1 | Run Time: 2025-11-04 12:20:56Assessment: INFORecommendation: This report analyzes the current profiled query.

Issue:Query Duration: .1 secondsAssessment: GOODRecommendation: Review other findings for optimization opportunities.

Issue:Memory Used: 2,684.2 MBAssessment: WARNINGRecommendation: High memory usage can lead to spills. Check for inefficient joins or aggregations.

Issue:Rows Processed: 3,020Assessment: WARNINGRecommendation: High ratio of processed to output rows suggests poor selectivity. Add more specific filters or improve projection design.

Issue:Spilled to Disk: NoAssessment: GOODRecommendation: Spills severely degrade performance. Increase memory for the resource pool or optimize the query.

Issue:AT QUERY TIME: Optimizer detected AUTO_PROJECTION_USED for The optimizer ran a query using auto-projectionsAssessment: CRITICALRecommendation: Consider creating projections or run database designer on table public.product_dimension

Issue:Query contains potentially inefficient operators (e.g., IN, OR, NOT IN).Assessment: WARNINGRecommendation: Use '=' and JOIN instead of IN, OR, NOT IN, or != to enable better join strategies.

(28 rows)

ConsoleZoom: 100%ResetClose my sessionsClear

[2025-11-04T10:02:02.524Z] Welcome to Vera. Install Vertica client for Windows first.[2025-11-04T10:02:02.526Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSOL64\vsql.exe

Host: 10.30.30.36DB: EEVDBUser: dbadmin

Query profile output example on a specific Tab:

Provides a detailed performance analysis of a recently executed SQL query. It highlights "TOP PERFORMANCE ISSUES" by analyzing several key metrics. These metrics include the query's execution time, memory usage, the number of rows processed, and whether data "spilled" to disk, if there was a high memory demand. The profile also offers recommendations for optimization, such as adding more specific filters, improving projection design, or utilizing UNION and JOIN instead of set operations like IN or NOT IN.

Vera

Workspace_01

Refresh

Run SQL

Visual

Settings

Demo

HELP

Logout

Filter

Database EEVDB

- Schemas (1013)
- Stored Procedures (14)
- System Tables (243)

V1

V2

(1) Generate Network data

(2) Query for Network graph

Sigma Network

Air-Bird Collision Risk Visualizer

```
1  -- =====
2  -- Sigma Demo Dataset for Network graph
3  -- =====
4  \set ON_ERROR_STOP on
5  \set DEMO_ROWS 120          -- persons to generate (tweak freely)
6  \set DAYS_BACK 10          -- create calls across the last N days
7
8  /*****
9  | 0) Clean up
10 *****/
11 DROP SCHEMA IF EXISTS vera_cdr_demo CASCADE;
12 CREATE SCHEMA vera_cdr_demo;
13
14 /*****
15 | 1) Seed rows (1..:DEMO_ROWS)
16 *****/
17 CREATE TABLE vera_cdr_demo.my_generated_data (
18   row_id INT PRIMARY KEY,
19   insdt  TIMESTAMP          DEFAULT SYSDATE(),
20   insusr VARCHAR(128)        DEFAULT CURRENT_USER(),
21   upddt  TIMESTAMP          DEFAULT SYSDATE(),
22   updusr VARCHAR(128)        DEFAULT CURRENT_USER()
```

Run & graph query

Multi columns graph

Network graph

3D Geo graph

050108357

Degree 22

In 12

Out 10

Size 10.2

Coords 3197.7410, -1536.7571

Color #4B5963

Console

Zoom: 80%

Reset

Close my sessions

Clear

[2025-11-19T07:12:20.431Z] Welcome to Vera. Install Vertica client for Windows first.

[2025-11-19T07:12:20.431Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSQ64\vsq1.exe

[2025-11-19T07:12:20.431Z] Open Settings to configure paths and connection details.

[2025-11-19T07:12:20.513Z] Loaded schema cache from disk

Status: Ready

(Last activity: -- / -- Rows output)

Host: 10.30.30.36

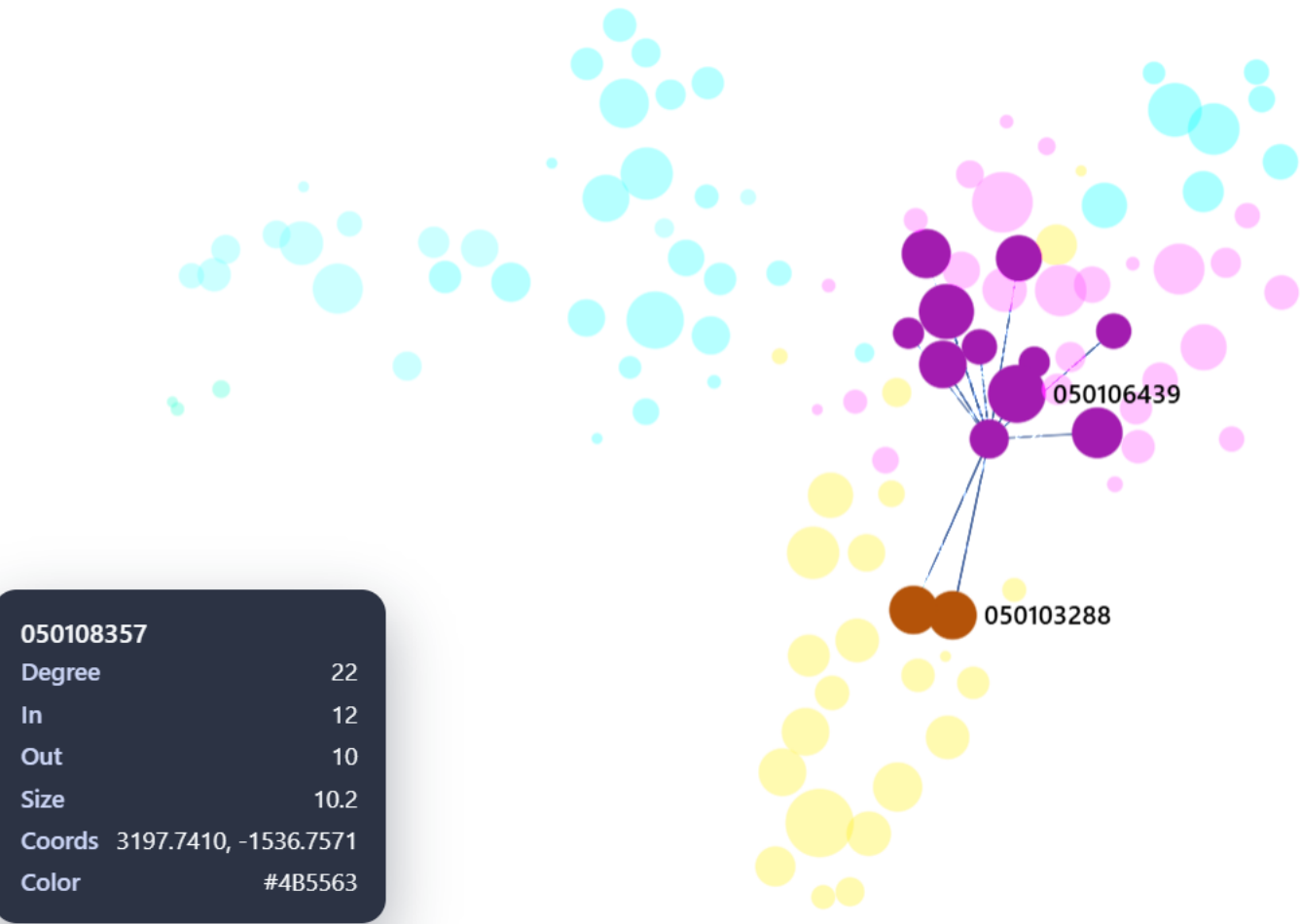
DB: EEVDB

User: dbadmin

Network graph - (2) Query for Network graph

110 nodes | 1,000 edges | 8.34% density | Force layout Source: source • Target: target • Weight: weight

Edge 0.65px | Opacity 0.46 | Labels auto | Raw graph | Colors categorical | Size degree | Scale 1.00x | Pictograms hidden | Lines gray
Minimum columns: id, label (optional), longitude, latitude. More info: <https://www.sigmajs.org/>



Graph controls

Edge thickness0.65 px

Edge opacity0.46

Network lines colorThin gray

Network lines labelHidden

Show labelsAuto

Graph modeRaw

Node color ruleCommunities

Node size ruleDegree driven

Node footprint1.00x

Node pictogramHidden

Node border

Actions

Defaults to thin gray edges to reduce clutter.

Show labels from the query or computed weights.

Uses node_color or detected communities when available.

Switch between degree-based sizing or node_size.

Adjust the overall node radius for zoomed-out views.

Highlights node_shape/node_icon inputs when present.

VeraWorkspace_01RefreshAnalyseRun SQLVisualSettings

Filter

Database EEVDB

- Schemas (1013)
- Stored Procedures (14)
- System Tables (243)

V1V2

(1) Generate data for Geo graph(2) Query for Geo graph

Sigma NetworkAdd tabsAir-Bird Collision Risk VisualizerAdd tabs

```
1  -- =====
2  -- Generate demo data for the "Visual" --> "3D Geo graph"
3  -- Per-second 3D tracks for Cesium/CZML
4  -- Continuous motion, compact generation, Vertica-safe
5  -- =====
6  \set ON_ERROR_STOP on
7
8  -- 0) Clean up
9  DROP SCHEMA IF EXISTS vera_madar_demo CASCADE;
10 CREATE SCHEMA vera_madar_demo;
11
12 -- 1) Parameters (tune here)
13 CREATE LOCAL TEMP TABLE vera_madar_demo__params ON COMMIT PRESERVE ROWS AS
14 SELECT
15     8  ::INT AS na,          -- aircraft
16     5  ::INT AS nf,          -- flocks
17     12 ::INT AS bpf,         -- birds per flock
18     600 ::INT AS seconds,    -- duration (seconds) << keep small for speed
19     40.643905::NUMERIC(9,6) AS lat_min,
20     40.92::NUMERIC(9,6) AS lat_max,
21     -73.779653::NUMERIC(9,6) AS lon_min,
22     -73.99::NUMERIC(9,6) AS lon_max;
```

Run & graph queryCtrl+G

Multi columns graph

Network graph

3D Geo graph

3D Geo graph - (2) Query for Geo graph

Interactive CZML viewer (offline)

Objects: 68

Rows used: 40800/40800

Time span: 2025-11-18T23:46:01.000Z -- 2025-11-18T23:56:00.000Z

Duration: 10.0 minutes

Columns: id=id, ts=iso_ts, lat=lat, lon=lon, alt=alt_m

aircraft(0)

bird(68)

Generated: 2025-11-19T08:01:07.268Z

-- Demo query for the "Visual" --> "3D Geo graph" SELECT o.serial AS id, o.obj_type AS obj_type, ID_CDM(p.ts, 'YYYY-MM-DDT"HHMMSS"Z') AS iso_ts, p.lat, p.lon, p.alt_m FROM vera_madar_demo.positions p JOIN vera_madar_demo.objects o ON o.object_id = p.object_id ORDER BY o.serial, p.ts LIMIT 50000

10x

Nov 18 2025 23:56:00 UTC

23:46:00.000Nov 18 2025 23:48:00.000Nov 18 2025 23:50:00.000Nov 18 2025 23:52:00.000Nov 18 2025 23:54:00.000Nov 18 2025 23:56:00.000

ConsoleZoom: 80%+Reset

Close my sessionsClear

[2025-11-19T07:48:26.365Z] vsql: "C:\Program Files\Vertica Systems\VSQL64\vsq.exe" -d EEVDB -h 10.30.30.36 -U dbadmin -w *** -f C:\Users\MGOLDB~1\AppData\Local\Temp\input_768dcd72-4e47-4ab4-a913-53489760e79f.sql

[2025-11-19T07:48:26.371Z] Network graph validation: ok (cols: source="source", target="target", weight="weight", rows used=1000/1000, nodes=110, edges=1000, coords 0%)

[2025-11-19T07:48:26.453Z] Network graph opened: C:\Users\MGOLDB~1\AppData\Local\Temp\vera-network-graphs__(2) Query for Network graph-network-graph-1763538506378.html

Status: Ready (Last activity: 8118 ms / 1,000 Rows output)

Host: 10.30.30.36 DB: EEVDB User: dbadmin

3D Geo graph - 💡 (2) Query for Geo graph

Interactive CZML viewer (offline)

Objects: 68

Rows used: 40800/40800

Time span: 2025-11-18T23:46:01.000Z → 2025-11-18T23:56:00.000Z

Duration: 10.0 minutes

Columns: id=id, ts=iso_ts, lat=lat, lon=lon, alt=alt_m

- aircraft(8)
- bird(60)

Generated: 2025-11-19T08:01:07.268Z

```
-- Demo query for the "Visual" --> "3D Geo graph"
SELECT o.serial AS id, o.obj_type AS obj_type, TO_CHAR(p.ts, 'YYYY-MM-DD"THH24:MI:SS"Z"') AS iso_ts, p.lat, p.lon, p.alt_m
FROM vera_madar_demo.positions p JOIN vera_madar_demo.objects o ON o.object_id = p.object_id
ORDER BY o.serial, p.ts LIMIT 50000
```



10x

Nov 18 2025

23:56:00 UTC

Vera

Workspace_01

Refresh

Analyze

Run SQL

View

Settings

HELP

Logout

Filter

Database EEVDB

Schemas (1008)

DEMO01

foo

KEDEM

online_sales

Tables (3)

☐ call_center

☐ online_page_dimension

☒ online_sales_fact

Views (0)

performance_test

pol

public

RAW

schema_01

sizecheck

SP_EXAMPLE

store

TT

UNIQUE_SCHEMA

v_func

v_license

v_txtindex

z_schema_10

z_schema_100

z_schema_1000

z_schema_101

z_schema_102

z_schema_103

z_schema_104

z_schema_105

z_schema_106

z_schema_107

z_schema_108

z_schema_109

z_schema_11

z_schema_110

z_schema_111

Query Profile

Query Explain

Table Workload

Projections Usage

Tables size

Graph selected columns

Queries Label

V3

V4

V5

V6

V7

V8

V9

Chart 10

SELECT ANALYZE_WORKLOAD('online_sales.online_sales_fact');

Expanded display is on.

-[RECORD 1]-----	
observation_count	1
first_observation_time	
last_observation_time	
tuning_parameter	online_sales.online_sales_fact
tuning_description	run database designer on table online_sales.online_sales_fact
tuning_command	
tuning_cost	HIGH

Console

Zoom: 100%

-

+

Reset

Close my sessions

Clear

To produce a table workload recommendations:

Select a table checkbox in the schema tree and click on **Table Workload** in the **Analyze** menu.

VERA will generate into the Editor window the statement to analyze how a specific table is being accessed by queries.

The resulting recommendation suggest to run Database designer, to create optimal database projections (like indexes in other databases) to enhance the performance and speed of future queries executed against that table.

441b-bb60-ca8a586663c7.sql

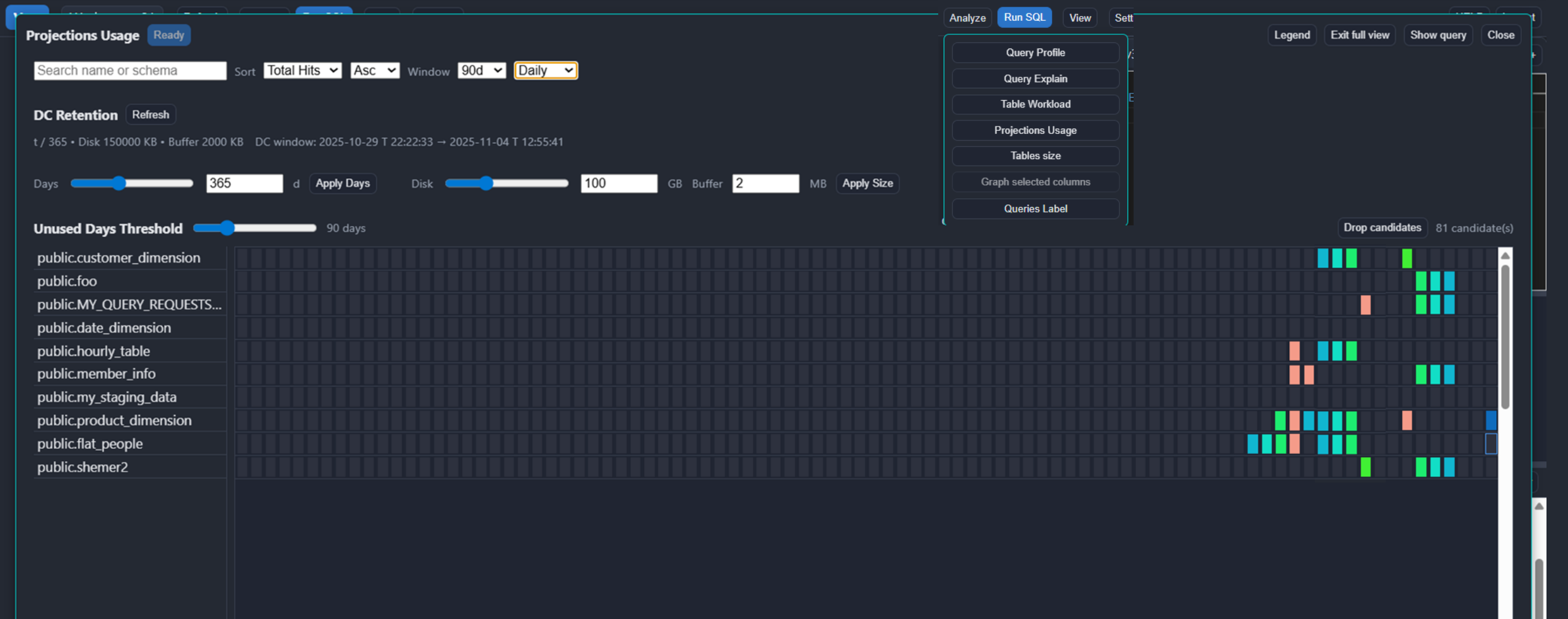
Status: Ready

(Last activity: 2215 ms)

Host: 10.30.30.36

DB: EEVDB

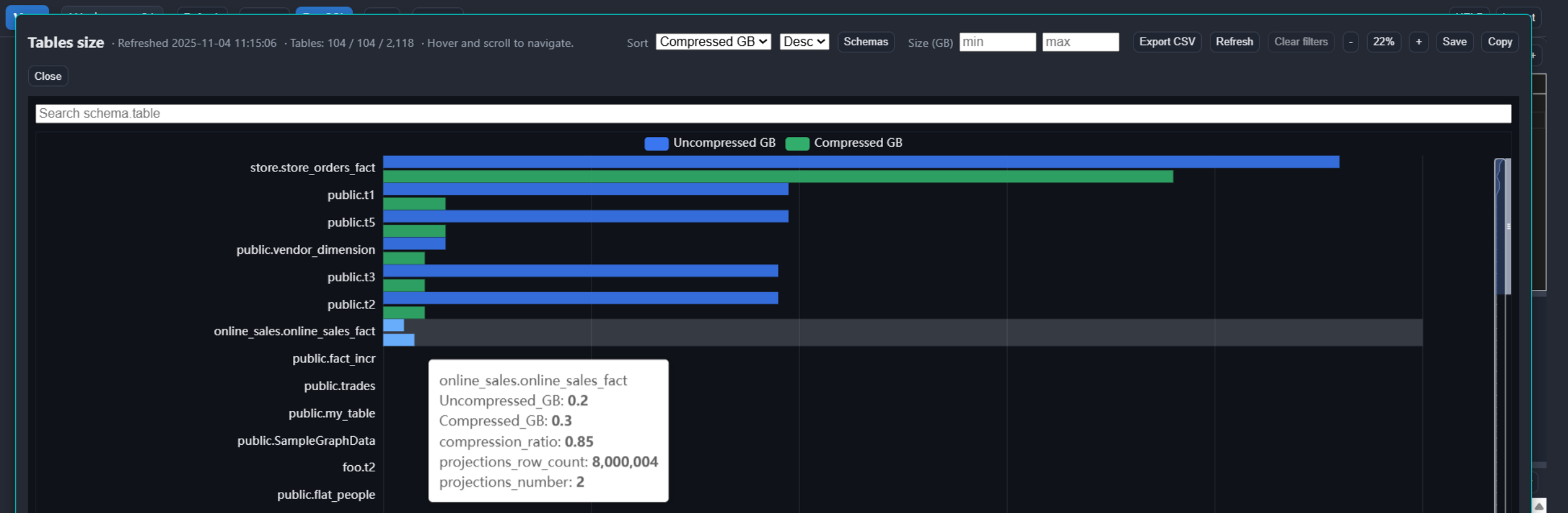
User: dbadmin



The **Projections Usage** menu option in the **Analyze** menu allows you to visualize and analyze historical table usage over a specified period. This historical view is made possible by the Data Collector (DC) retention information which tracks and saves projection and table access statistics.

In this example we can see settings like Days (365) and DC Window (2025-10-29 to 2025-11-04), indicating the desired period for which the usage data is being displayed, constrained by the underlying DC retention policies for the relevant monitoring components (e.g., dc_projections_used).

The colorful grid illustrates the daily usage pattern for various tables over the selected time window.



The **Tables Size** menu option in the **Analyze** menu designed to visualize and compare the size of tables in the database. This feature offers a bar chart visualization that allows users to quickly compare the uncompressed size (raw data) against the compressed size for each table in the database.

By hovering over a specific table's bar, as shown for `online_sales.online_sales_fact`, detailed metrics like Uncompressed GB, Compressed GB, the compression ratio, and row count are revealed.

The metric's ability to show the compression ratio (Compressed / Uncompressed) is highly valuable for evaluating the effectiveness of a table's chosen column data types and encodings. High ratio suggests that the current choices are optimizing storage efficiency, while low ratio suggests to tune the relevant column(s) encodings and/or data type. This comparison is critical for monitoring storage utilization, evaluating the effectiveness of data compression strategies, and identifying the largest or most compressible tables.

Vera

Workspace_01

Refresh

Analyze

Run SQL

View

Settings

Filter

Database EEVDB

Schemas (1008)

DEMO01

foo

KEDEM

online_sales

Tables (3)

call_center_dimension

online_page_dimension

online_sales_fact

Columns

sale_date_key - int

ship_date_key - int

product_key - int

product_version - int

customer_key - int

call_center_key - int

online_page_key - int

shipping_key - int

warehouse_key - int

promotion_key - int

pos_transaction_number - int

sales_quantity - int

sales_dollar_amount - float

ship_dollar_amount - float

net_dollar_amount - float

cost_dollar_amount - float

gross_profit_dollar_amount - float

transaction_type - varchar(16)

Views (0)

performance_test

pol

V1V2v3V4V5V6

1 \x

2 SELECT ANALYZE_WORKLOAD('online_sales.online_sales_fact');

3

Expanded display is on.

-[RECORD 1]-----+-----

observation_count | 1

first_observation_time |

last_observation_time |

tuning_parameter | online_sales.online_sales_fact

tuning_description | run database designer on table online_sales.online_s

tuning_command |

tuning_cost | HIGH

Console

Zoom: 120%

-

+

Reset

Close my sessions

Clear

[2025-11-04T10:02:02.524Z] Welcome to Vera. Install Vertica client for Windows first.

[2025-11-04T10:02:02.526Z] Expected vsql.exe (typical): C:\Program Files\Vertica Systems\VSQ64\vsq.exe

[2025-11-04T10:02:02.526Z] Open Settings to configure paths and connection details.

[2025-11-04T10:02:02.639Z] Loaded schema cache from disk

[2025-11-04T10:10:27.980Z] Starting schema refresh...

[2025-11-04T10:10:27.980Z] Using vsql host=10.30.30.36 db=EEVDB user=dbadmin pw=***

[2025-11-04T10:10:31.547Z] vsql exit code: 0

[2025-11-04T10:10:31.547Z] vsql stdout length: 173213

[2025-11-04T10:10:31.547Z] fetch-schema: received 4277 line(s)

[2025-11-04T10:10:31.547Z] Database name: EEVDB

[2025-11-04T10:10:31.558Z] Parsed: schemas=1008 tables=2118 views=12 stored_procs=14

sys_tables=243 columns=3000 sp_args=23

[2025-11-04T10:10:31.656Z] Saved schema cache: ok

HELP

Logout

Close

When a user clicks on **HELP**

VERA opens the documentation doc

in the user default browser as HTML document.

Ask about your data, e.g. "List top 10 customers by revenue for last month"

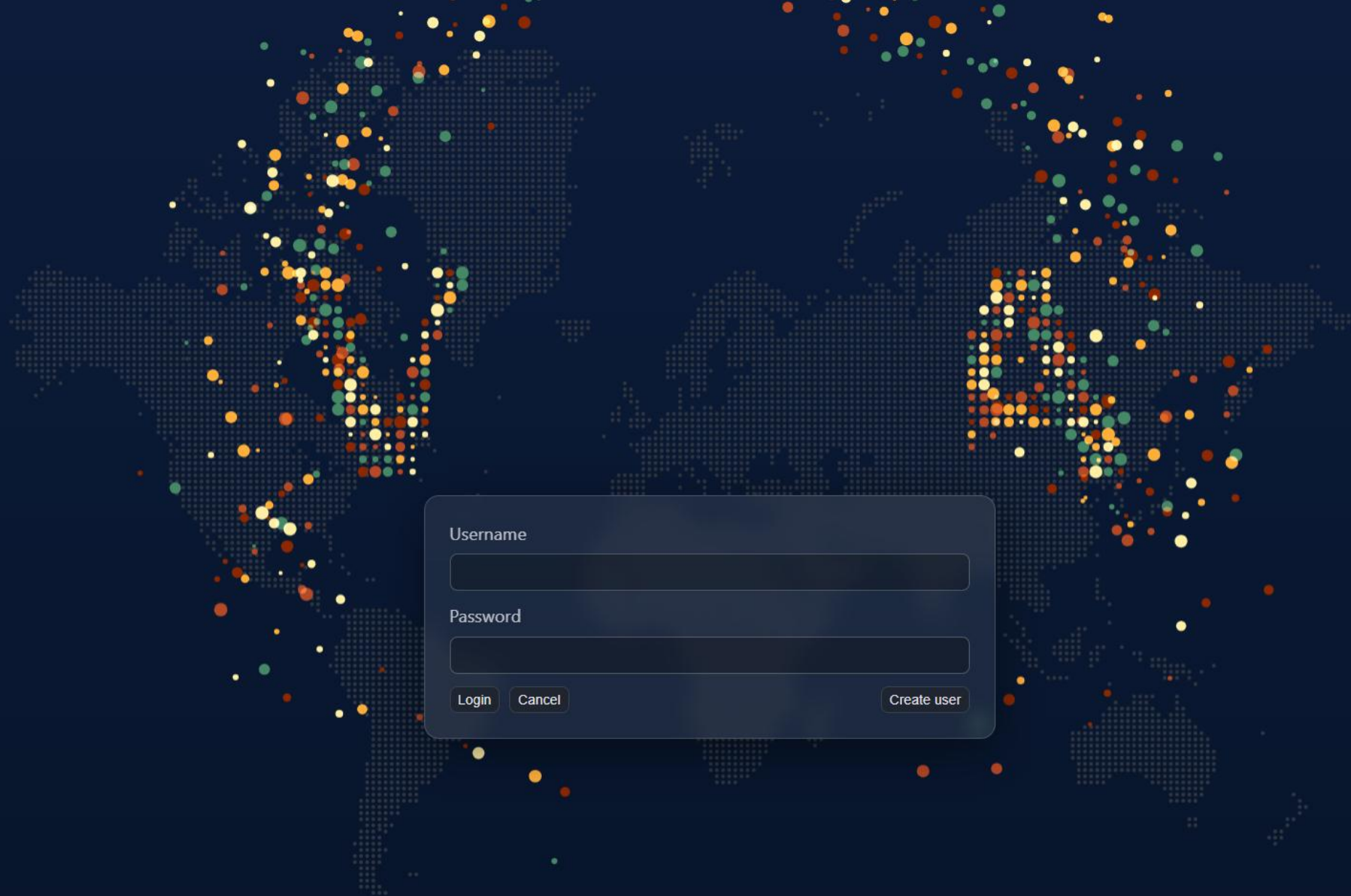
Send

New chat

Ask a question or instruct the assistant...

Status: Ready (Last activity: 2109 ms)

Host: 10.30.30.36 DB: EEVDB User: dbadmin



The login screen features colorful, animated beads that react to mouse hover actions and scatter in response.