



SATI DB AI Advisor & Analyzer

Product Presentation

2025



Viriya's SATI DB AI Advisor & Analyzer



Viriya's SATI DB Advisor & Analyzer Tools

- Benefits:
 - Made in Indonesia
 - 16 years+ experience into single tools
 - SQL Editor and execution
 - Monitoring and Analysing Tools
 - Lightweighted Tools and support low latency network
 - Multi-Threaded Application
 - AI Analyzer for Query Restructuring and Tuning
 - AI DB Security Assessor and Advisor
 - Increase DBA / SQL Dev Productivity
 - Customizable and Tailoring Menu based on your needs (Contact Us)

Viriya's SATI Compatible Databases

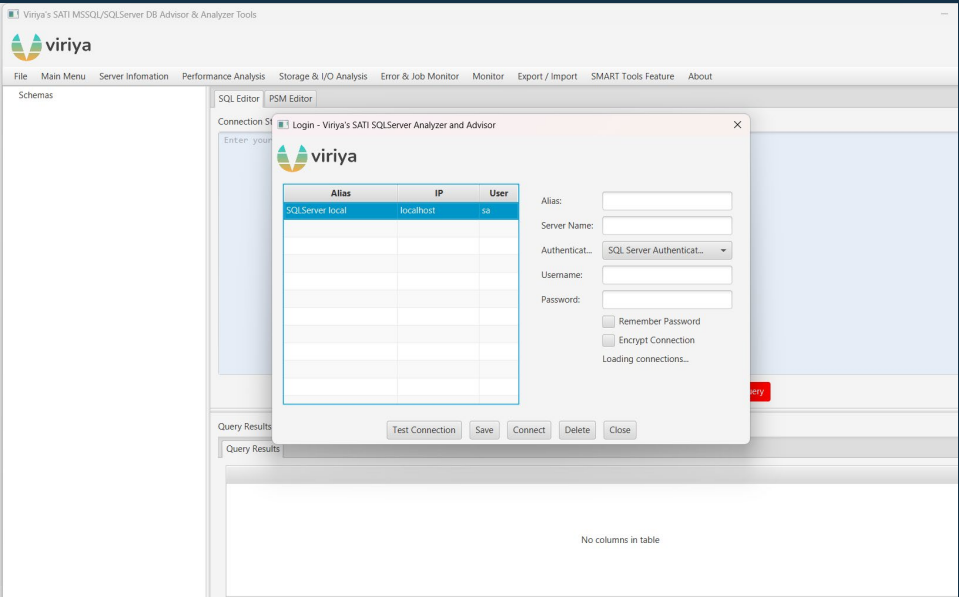
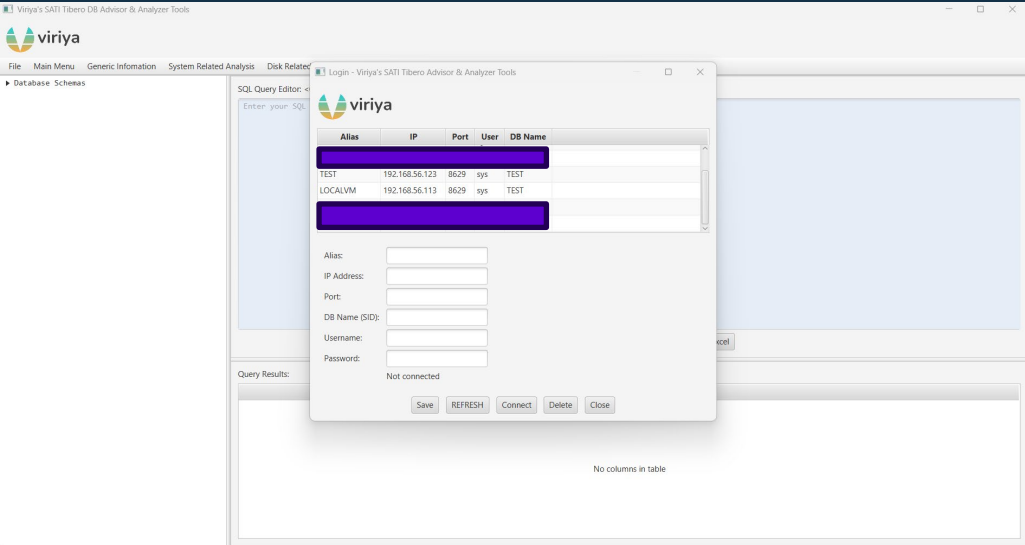
Viriya's SATI 		
	 TmaxTibero	

Viriya's SATI Main Features

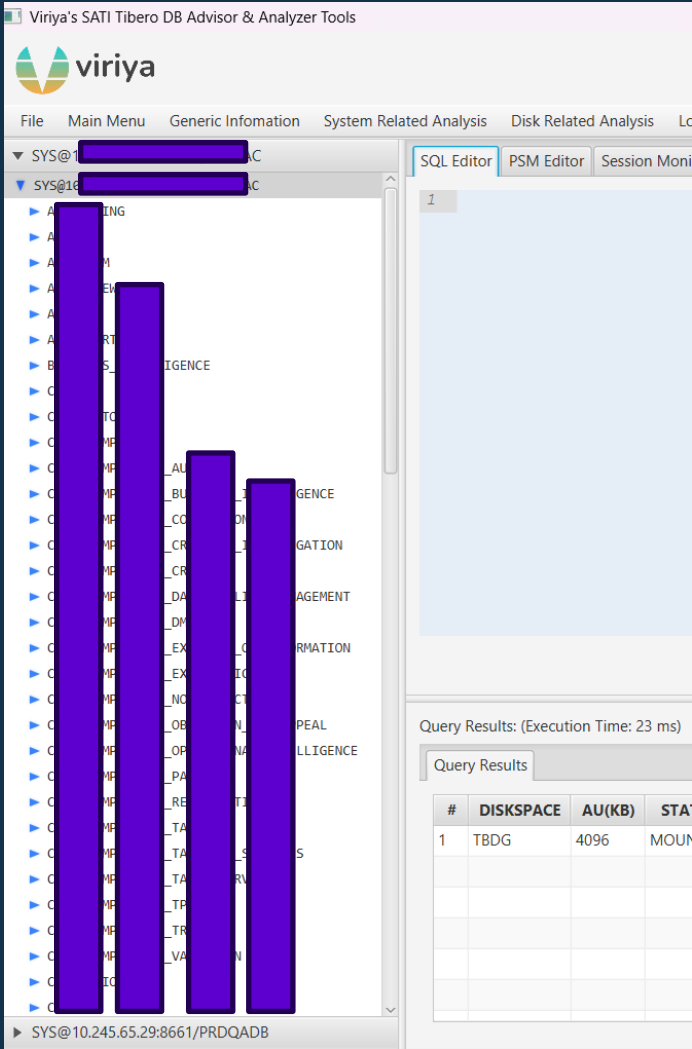
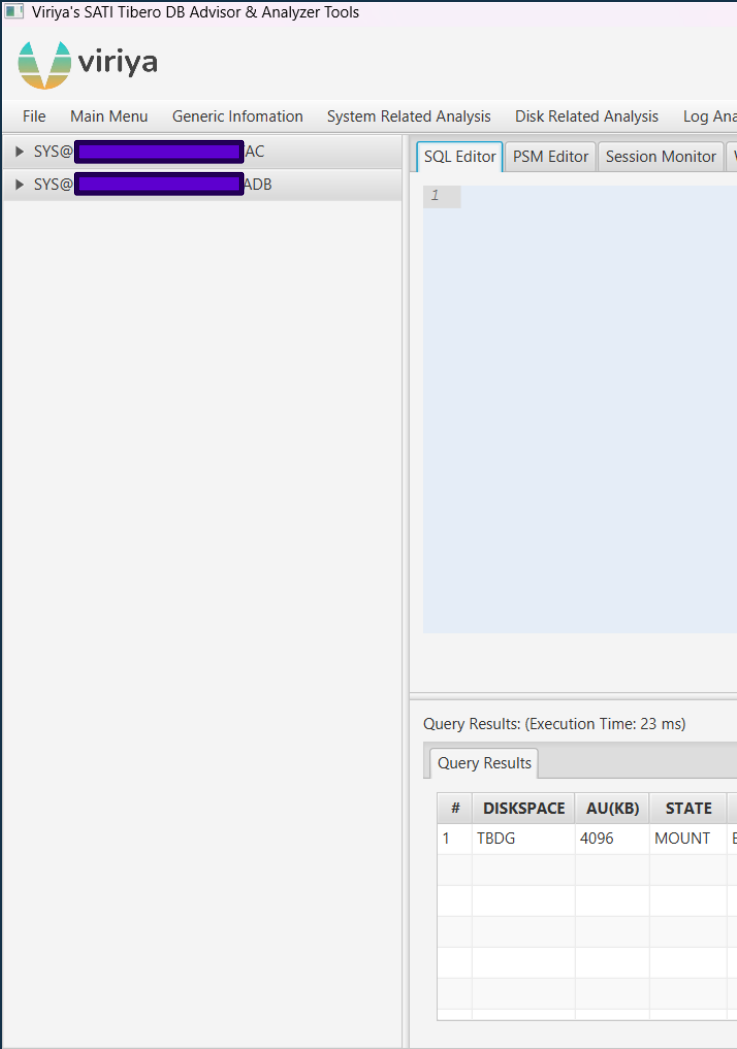


1. Multi Database Connection Support (Oracle & Tiberio)
2. Create, drop , edit database objects.
3. SQL Executions and Stored procedure (or TSQL)
4. Multi threaded editor , with fast performance.
5. Monitoring , analysing and diagnosing.
6. AI Query Advisor , AI Database objects constructor and schema objects comparator.

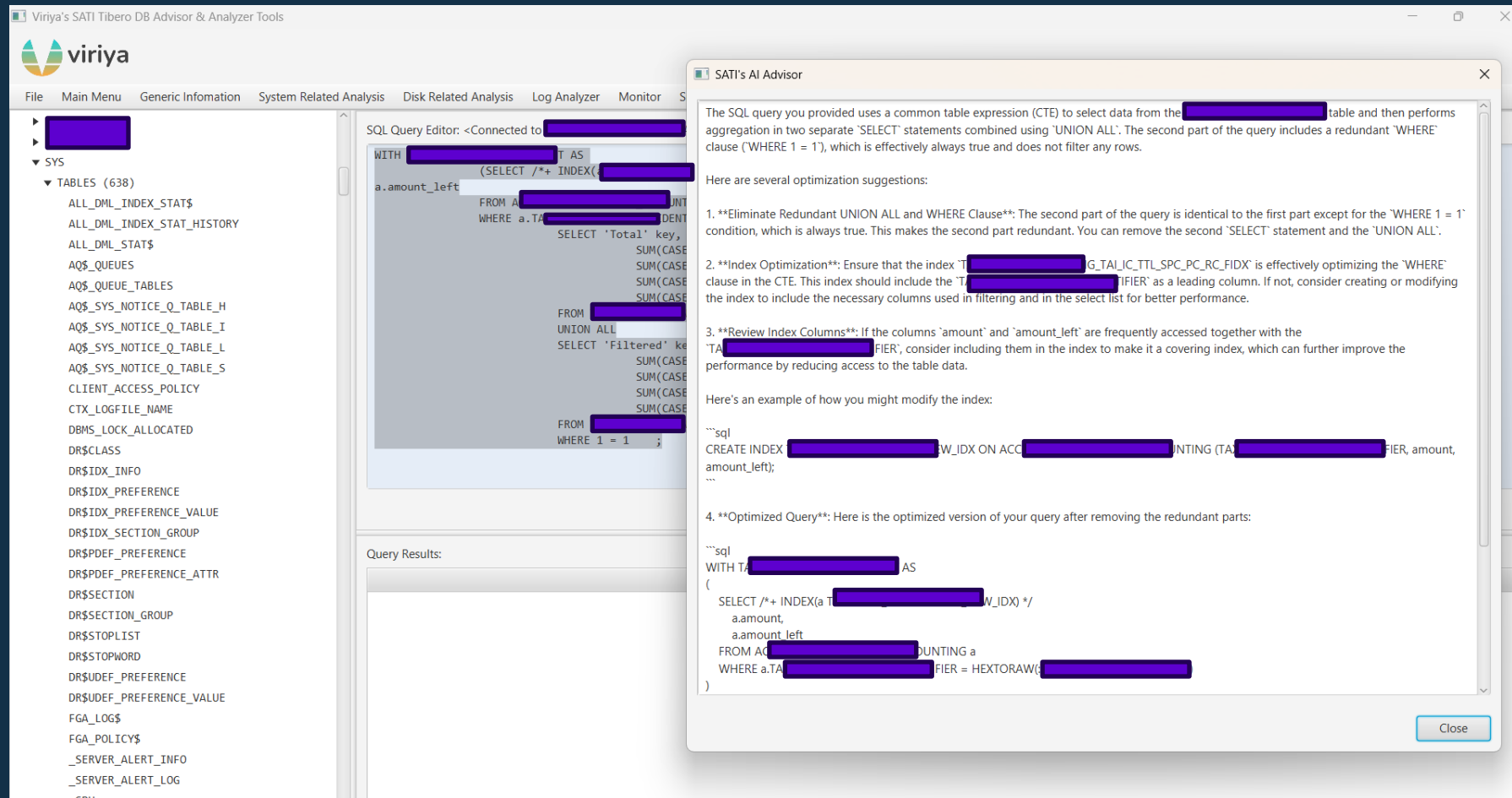
Viriya's SATI Login Page



SchemaTree View for Multi Database Connection



Viriya's SATI – Smart AI Advisor



The screenshot displays the Viriya's SATI Tibero DB Advisor & Analyzer Tools interface. The main window shows a SQL Query Editor with a query involving a common table expression (CTE) and a UNION ALL statement. A list of tables is visible on the left, including ALL_DML_INDEX_STAT\$, ALL_DML_INDEX_STAT_HISTORY, ALL_DML_STAT\$, AQ\$, AQ\$, AQ\$, AQ\$, CTX_LOGFILE_NAME, DBMS_LOCK_ALLOCATED, DR\$, DR\$, DR\$, DR\$, DR\$, DR\$, DR\$, DR\$, FGA_LOG\$, FGA_POLICY\$, _SERVER_ALERT_INFO, and _SERVER_ALERT_LOG. A pop-up window titled "SATI's AI Advisor" provides optimization suggestions for the query.

SATI's AI Advisor

The SQL query you provided uses a common table expression (CTE) to select data from the [redacted] table and then performs aggregation in two separate 'SELECT' statements combined using 'UNION ALL'. The second part of the query includes a redundant 'WHERE' clause ('WHERE 1 = 1'), which is effectively always true and does not filter any rows.

Here are several optimization suggestions:

- **Eliminate Redundant UNION ALL and WHERE Clause**:** The second part of the query is identical to the first part except for the 'WHERE 1 = 1' condition, which is always true. This makes the second part redundant. You can remove the second 'SELECT' statement and the 'UNION ALL'.
- **Index Optimization**:** Ensure that the index 'G_TAI_IC_TTL_SPC_PC_RC_FIDX' is effectively optimizing the 'WHERE' clause in the CTE. This index should include the 'TA [redacted] FIER' as a leading column. If not, consider creating or modifying the index to include the necessary columns used in filtering and in the select list for better performance.
- **Review Index Columns**:** If the columns 'amount' and 'amount_left' are frequently accessed together with the 'TA [redacted] FIER', consider including them in the index to make it a covering index, which can further improve the performance by reducing access to the table data.

Here's an example of how you might modify the index:

```
sql
CREATE INDEX [redacted]_W_IDX ON ACC [redacted] (TA [redacted] FIER, amount, amount_left);
...
```

4. **Optimized Query:** Here is the optimized version of your query after removing the redundant parts:

```
sql
WITH T AS
(
  SELECT /*+ INDEX(a T [redacted]_W_IDX) */
    a.amount,
    a.amount_left
  FROM ACC [redacted] TUNTING a
  WHERE a.TA [redacted] FIER = HEXTORAW([redacted])
)
```

Close



Viriya's SATI – Database AI Constructor

The screenshot displays the Viriya's SATI TIBERO DB Advisor & Analyzer Tools interface. The main window is titled "Viriya's SATI TIBERO DB Advisor & Analyzer Tools" and features a sidebar with a tree view of database schemas. The "TIBERO" schema is expanded, showing tables like "CUSTOMERS", "ORDERS", "STALE_STAT_TEST", "TEST11111", "TESTINSERT", "TEST_NUMBER", and "XX".

The "AI Constructor" window is open, showing a dropdown menu with options: "Stored Procedure", "Materialized View", "MV Logs", "Function", "Package", and "Stored Procedure". The "Stored Procedure" option is selected. Below the dropdown, there are radio buttons for "No Dependency" and "Dependency", with "Dependency" selected. A text box contains the schema "TIBERO.CUSTOMERS, TIBERO.ORDERS". Below this, a description reads: "takes a CUSTOMER_ID as input and retrieves all orders for that customer."

The "Generated SQL" section shows the following SQL code:

```

To create a stored procedure in TIBERO th
```sql
CREATE OR REPLACE PROCEDURE GetCustomerOr
p_customer_id IN TIBERO.CUSTOMERS.CUS
)
IS
 CURSOR order_cursor IS
 SELECT o.ORDER_ID, o.ORDER_DATE,
 FROM TIBERO.ORDERS o
 WHERE o.CUSTOMER_ID = p_customer_
 BEGIN
 -- Open the cursor
 OPEN order_cursor;

 -- Fetch and display each order
 FOR order_rec IN order_cursor LOOP
 DBMS_OUTPUT.PUT_LINE('Order ID: '
 ', Order Dat
 ', Order Amo
 END LOOP;

 -- Close the cursor
 CLOSE order_cursor;
 EXCEPTION
 WHEN NO_DATA_FOUND THEN
 DBMS_OUTPUT.PUT_LINE('No orders f
 WHEN OTHERS THEN
 DBMS_OUTPUT.PUT_LINE('Error: ' ||
 END GetCustomerOrders;
```



The "Prompt History" section shows the following text:



```

Module: Stored Procedure
Objects: TIBERO.CUSTOMERS, TIBERO.ORDERS
Logic: takes a CUSTOMER_ID as input and ret

```

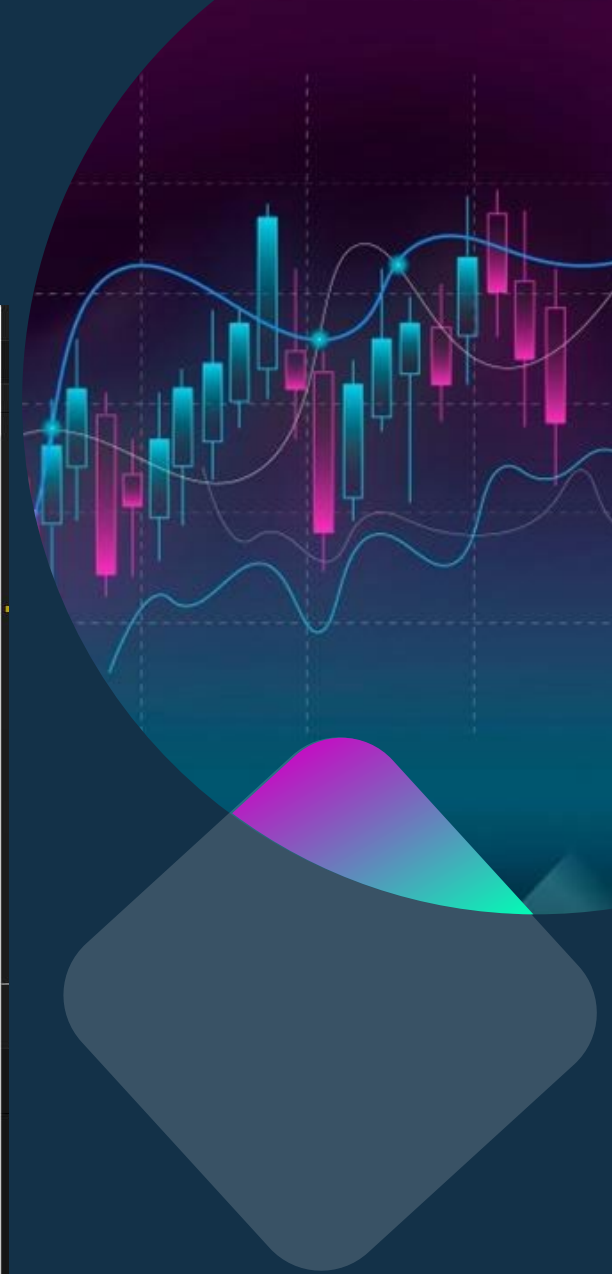
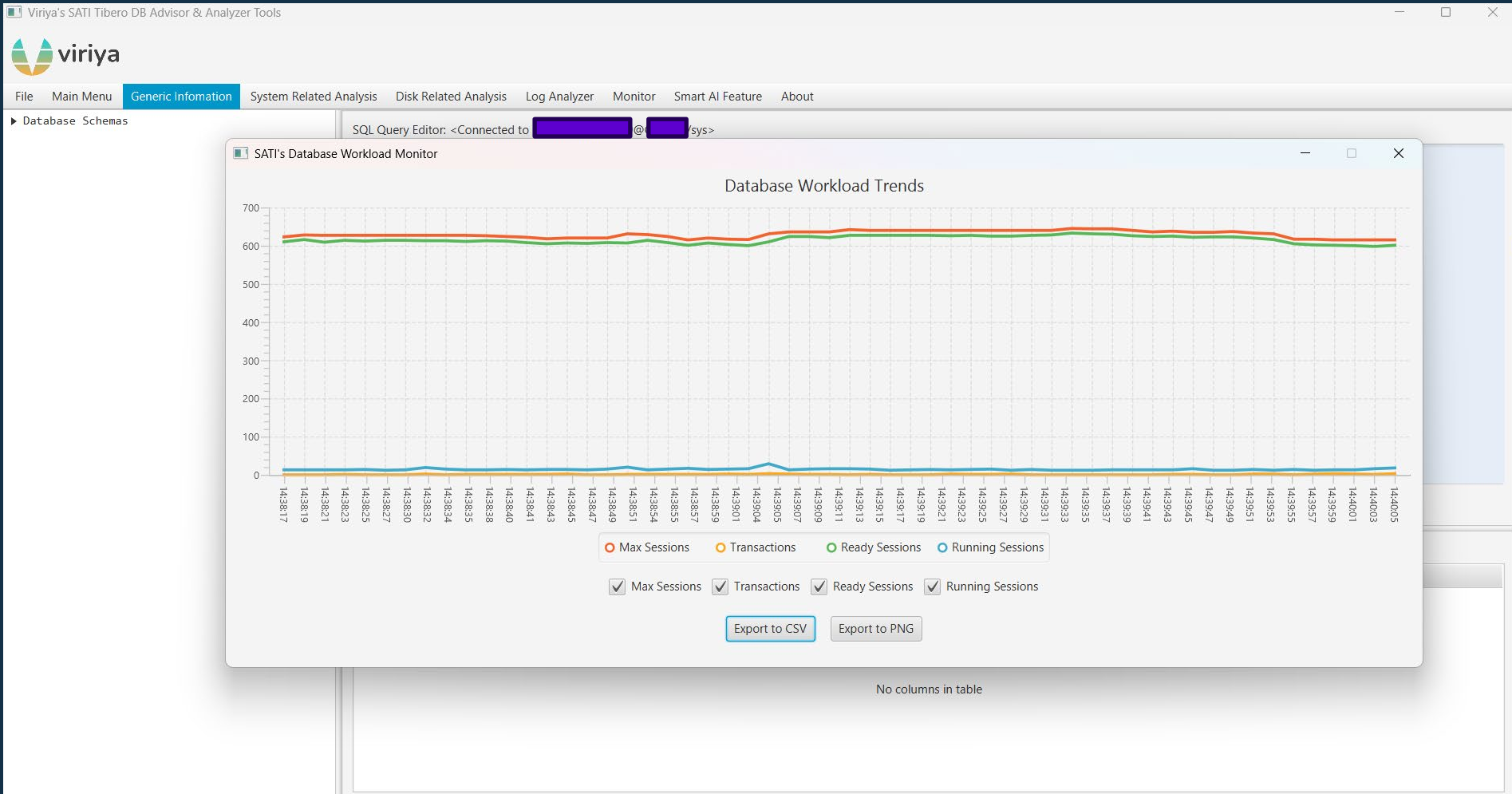


Buttons for "Generate SQL" and "Copy Result" are visible at the bottom of the AI Constructor window.

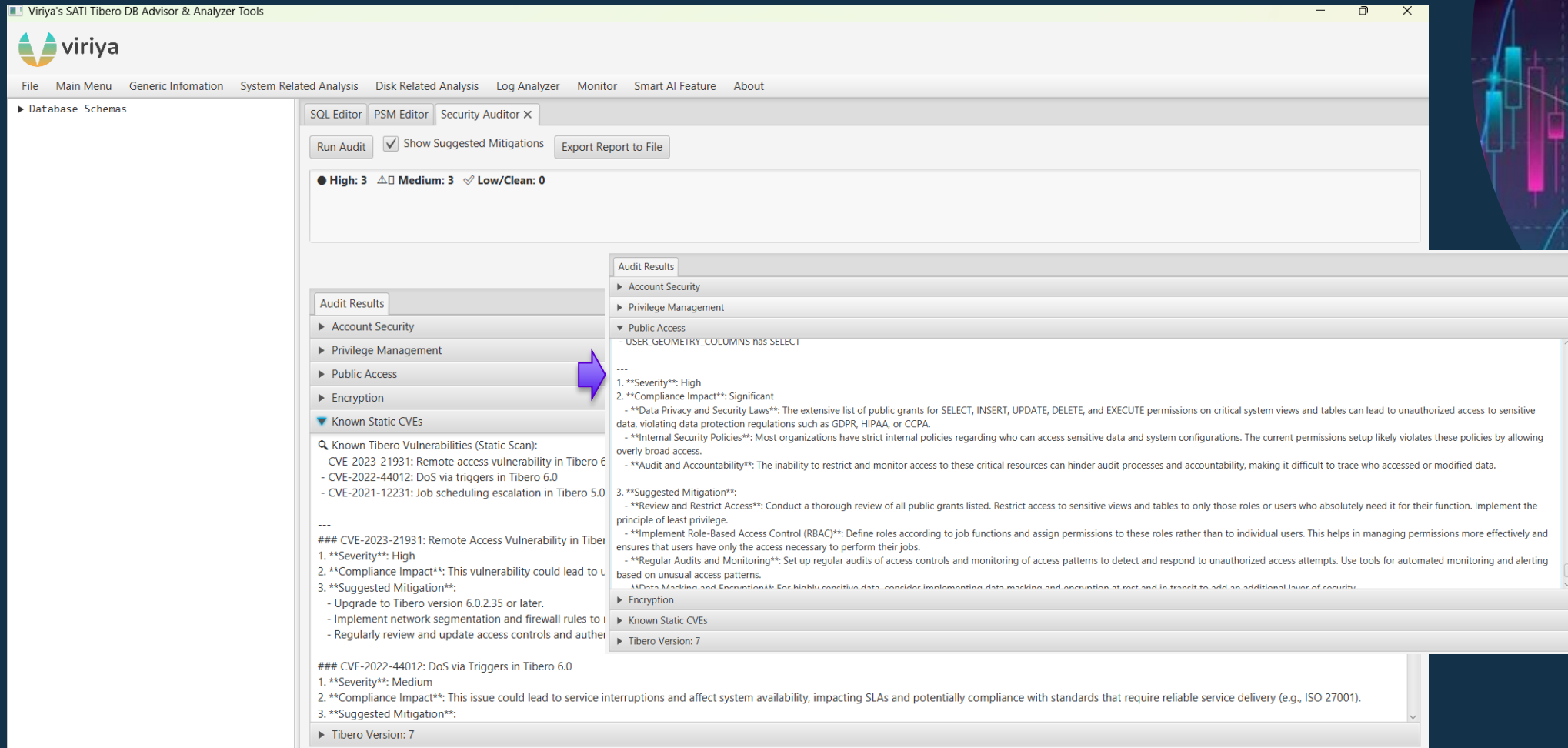

```



Viriya's SATI – Database Workload Monitor



Viriya's SATI – DB Security Assessor and Advisor



The screenshot displays the Viriya's SATI Tibero DB Advisor & Analyzer Tools interface. The top navigation bar includes options like File, Main Menu, Generic Information, System Related Analysis, Disk Related Analysis, Log Analyzer, Monitor, Smart AI Feature, and About. The left sidebar shows a tree view with categories: Database Schemas, SQL Editor, PSM Editor, Security Auditor (selected), Run Audit, Show Suggested Mitigations, and Export Report to File. The main content area shows the Security Auditor results, including a summary of findings (High: 3, Medium: 3, Low/Clean: 0) and a detailed view of the Audit Results for Account Security. A purple arrow points to the 'Public Access' section in the left sidebar.

Security Auditor X

Run Audit ☒ Show Suggested Mitigations Export Report to File

● High: 3 ▲ Medium: 3 ♥ Low/Clean: 0

Audit Results

- Account Security
- Privilege Management
- Public Access
 - USER_GEOMETRY_COLUMNS has SELECT
- Encryption
- Known Static CVEs

Known Static CVEs

Q Known Tibero Vulnerabilities (Static Scan):

- CVE-2023-21931: Remote access vulnerability in Tibero 6.0
- CVE-2022-44012: DoS via triggers in Tibero 6.0
- CVE-2021-12231: Job scheduling escalation in Tibero 5.0

CVE-2023-21931: Remote Access Vulnerability in Tibero 6.0

1. **Severity**: High
2. **Compliance Impact**: Significant
 - **Data Privacy and Security Laws**: The extensive list of public grants for SELECT, INSERT, UPDATE, DELETE, and EXECUTE permissions on critical system views and tables can lead to unauthorized access to sensitive data, violating data protection regulations such as GDPR, HIPAA, or CCPA.
 - **Internal Security Policies**: Most organizations have strict internal policies regarding who can access sensitive data and system configurations. The current permissions setup likely violates these policies by allowing overly broad access.
 - **Audit and Accountability**: The inability to restrict and monitor access to these critical resources can hinder audit processes and accountability, making it difficult to trace who accessed or modified data.
3. **Suggested Mitigation**:
 - **Review and Restrict Access**: Conduct a thorough review of all public grants listed. Restrict access to sensitive views and tables to only those roles or users who absolutely need it for their function. Implement the principle of least privilege.
 - **Implement Role-Based Access Control (RBAC)**: Define roles according to job functions and assign permissions to these roles rather than to individual users. This helps in managing permissions more effectively and ensures that users have only the access necessary to perform their jobs.
 - **Regular Audits and Monitoring**: Set up regular audits of access controls and monitoring of access patterns to detect and respond to unauthorized access attempts. Use tools for automated monitoring and alerting based on unusual access patterns.
 - **Data Masking and Encryption**: For highly sensitive data, consider implementing data masking and encryption at rest and in transit to add an additional layer of security.

- Upgrade to Tibero version 6.0.2.35 or later.

- Implement network segmentation and firewall rules to

- Regularly review and update access controls and authentication

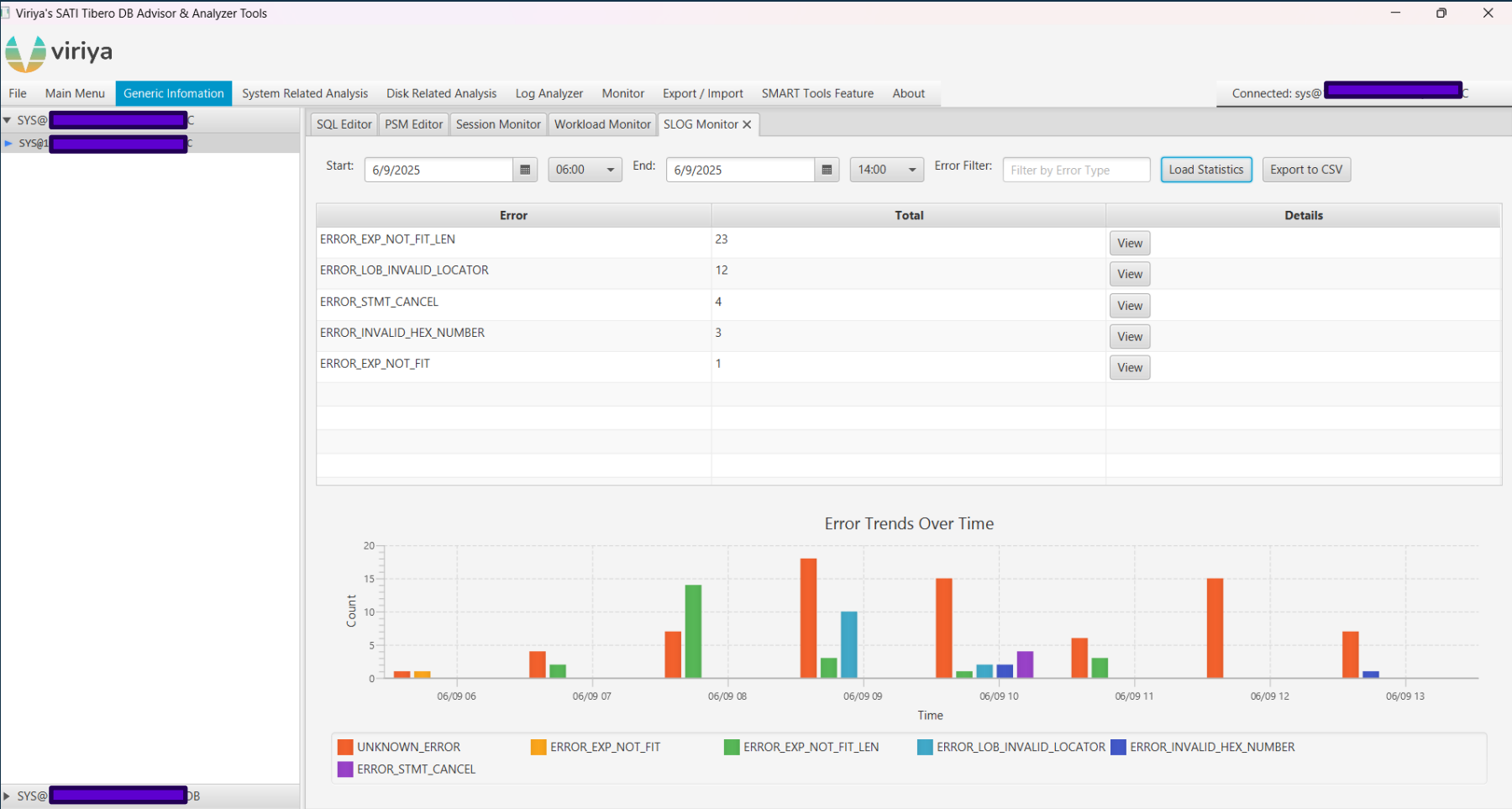
CVE-2022-44012: DoS via Triggers in Tibero 6.0

1. **Severity**: Medium
2. **Compliance Impact**: This issue could lead to service interruptions and affect system availability, impacting SLAs and potentially compliance with standards that require reliable service delivery (e.g., ISO 27001).
3. **Suggested Mitigation**:

Tibero Version: 7



Viriya's SATI – DB Log Monitoring



Viriya's SATI – Object Compare

SQL EditorPSM EditorSession MonitorWorkload MonitorSchema Compare X

DB 1: sys[redacted]862...DB 2: sys@[redacted]661/...

Sche... TIBERO...Sche... TIBERO...TABLES...Co...S...All Status...Export to ...

| Object Name | Status | Details |
|-------------------------------|-----------|---------|
| ABC | ONLY IN A | - |
| DU[redacted] | ONLY IN A | - |
| DU[redacted].AGG | ONLY IN A | - |
| E[redacted].MISSING_JSON_TEST | ONLY IN A | - |
| [redacted] | ONLY IN A | - |
| EVENTS | ONLY IN A | - |
| EVENTS_2 | ONLY IN A | - |
| NFT_BACKUP | ONLY IN A | - |
| ORDERS | MATCH | - |
| T1 | ONLY IN A | - |
| TEMP_ORDERS | ONLY IN A | - |
| TEST_REST | ONLY IN A | - |
| __MIGRATION_HISTORY | MATCH | - |

Schema A DDL

CREATE TABLE TIBERO.__MIGRATION_HISTORY (
 SCRIPT_NAME NVARCHAR,
 ERROR_MESSAGE CLOB,
 TIMESTAMP NUMBER(19)
);

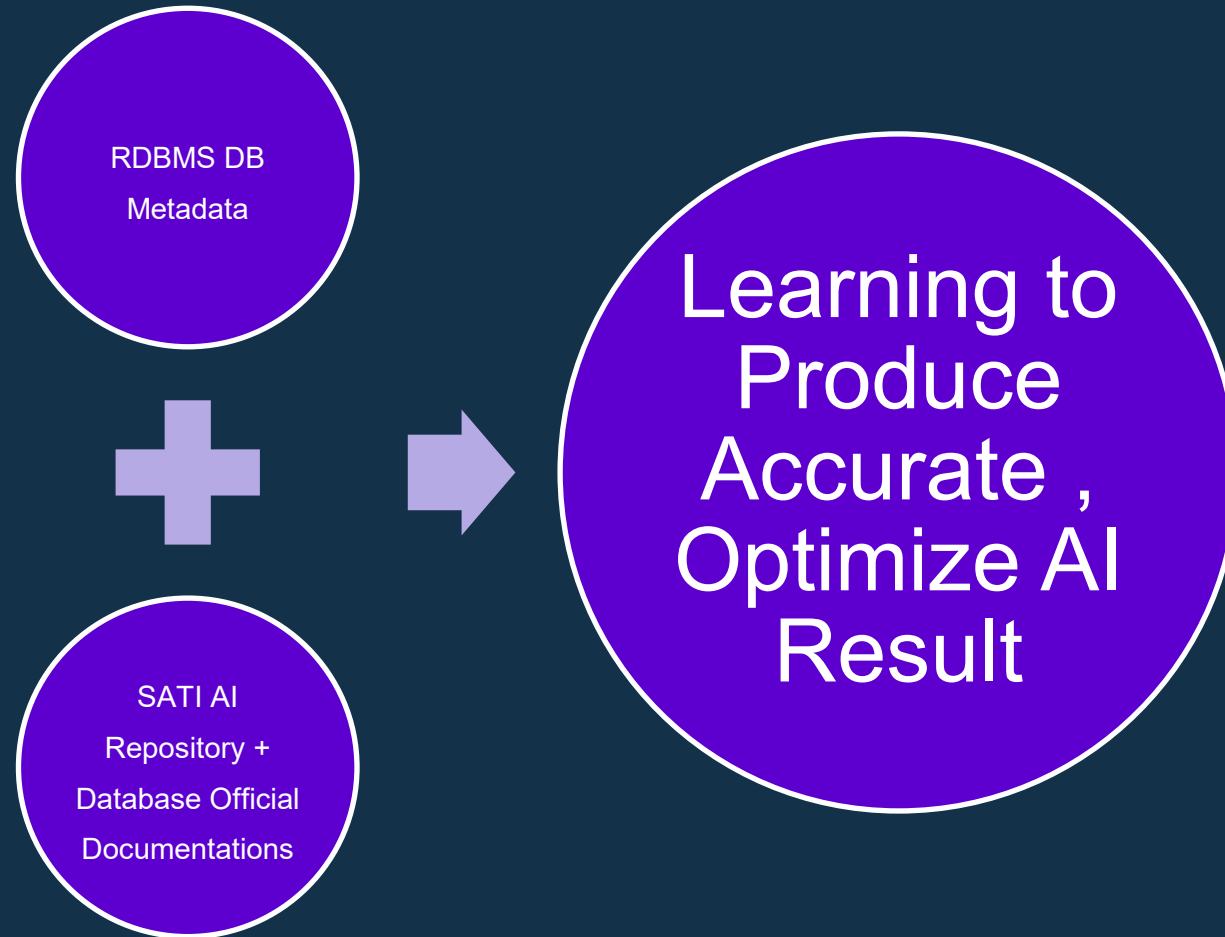
Schema B DDL

CREATE TABLE TIBERO.__MIGRATION_HISTORY (
 SCRIPT_NAME NVARCHAR,
 ERROR_MESSAGE CLOB,
 TIMESTAMP NUMBER(19)
);

Generate Sync SQL



Viriya's SATI – How is our AI works ?



Viriya's SATI Technology Roadmap



1. Enhance MSSQL to behave like SSMS on object tree mapping.
2. Enhance MSSQL CLR functions advisor , monitoring and AI enhancements.
3. Enhance MSSQL Stability and performance.
4. Enhance Oracle supporting containerization connect.
5. Enhance Tibero Tablespace visual describing.



Any Question?



Why Viriya?



- Industry-leading expertise in Tiberio DB and enterprise database solutions.
- Proven track record in complex database migrations and optimizations
- Strategic partnerships with key technology providers and business partners
- Scalable service model to support national and regional scale projects



Thank you!



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