SAP Solution Manager - Solution Reporting

SAP Solution Manager Product Management
SAP AG
Reporting Concept

- EWA Reporting
- Service Level Reporting
- Solution Reporting

Summary
Role of SAP Solution Manager in Lifecycle Management

**Application Management**

**SAP Solution Manager**
- Maintenance strategy, processes, and projects
- Continuous improvement projects
- Software Change Management
  - Development and enhancement projects
  - Deployment projects

**NetWeaver Lifecycle Management**

**SAP NetWeaver Administration Tools + Software Logistics**
- Daily system administration and monitoring
- Configuration
- Initial Setup
- Software Maintenance Management
- Business Content Lifecycle
KPI Reporting Architecture – Early Watch Alert (EWA)

SAP Solution Manager

- Collected EWA Data
  - + Business Process Data
  - + Additional Service Data
  - EWA Reports
    - Availability Reporting
    - Service Level Reporting
    - Service Reporting

CCMS Monitoring Infrastructure

- Central Performance History

SAP NetWeaver BI

- EWA BI Content
  - BI Queries
  - CPH BW Content

System 1

- EWA Data
- CCMS

System 2

- EWA Data
- CCMS

System n

- EWA Data
- CCMS

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What is SAP EarlyWatch Alert?

Important system data is transmitted from SAP customer system to SAP Solution Manager at regular intervals via remote connection:

- The data transferred includes only technical data with non-sensitive content, which is transparent and manageable in transaction SDCCN.

SAP Solution Manager analyzes this data and provides a clear overview of the results in a report, which can be downloaded from or distributed by SAP Solution Manager.

- Keeping total cost of ownership low and the performance of your SAP solution high is a tremendous value to your business – a value delivered by SAP EarlyWatch Alert.
<table>
<thead>
<tr>
<th>Benefits of EWA in SAP Solution Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you display the EarlyWatch Alert in SAP Solution Manager, you benefit from:</td>
</tr>
<tr>
<td>- Access to detailed download data on which EWA Reports are founded</td>
</tr>
<tr>
<td>- Higher availability of graphics (only a limited selection is available on SAP Service Marketplace)</td>
</tr>
<tr>
<td>- Concise, central administration and archiving possible</td>
</tr>
<tr>
<td>- Allocation and documentation of tasks (in EWA Session).</td>
</tr>
<tr>
<td>- Summary of EWAs and selection of content via SL Reporting</td>
</tr>
<tr>
<td>- Tracking of tasks in SL Reporting.</td>
</tr>
</tbody>
</table>
SAP EarlyWatch Alert is performed on a weekly basis at the customer site using the SAP Solution Manager.

In case of any critical alerts monitored by SAP EarlyWatch Alert, the results will be sent in addition to the periodical reports to SAP. An SAP EarlyWatch Check will be scheduled by SAP. Each productive installation is entitled to up to two SAP EarlyWatch Checks per year performed by SAP within SAP Standard Support.
EarlyWatch Alert (EWA) and EarlyWatch Check

**Satellite System**
- Collect Data
- Send EWA Data
- Implement recommendations

**SAP Solution Manager**
- Process EWA Data
- Check EWA Report
- Deliver Services (for example Early Watch)

**SAP Support**
- Check red rated EWA Report
- Contact Customer and create Service Plan

**Customer**
- Implement recommendations

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EarlyWatch Alert (EWA) and Solution Manager Diagnostics

Monitored SAP System

Solution Manager Diagnostics

Abstraction and Aggregation

SAP EarlyWatch Alert

Stability

Performance

Resource Utilization

Customer’s Perspective
## EWA for Non-ABAP - KPI Coverage

<table>
<thead>
<tr>
<th>Data Source</th>
<th>KPI</th>
<th>Stability</th>
<th>Performance</th>
<th>Resource Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage Collection Analysis</td>
<td>GC Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Memory Growth Rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Memory Usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wily Introscope Data</td>
<td>Top iViews</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Top WebDynpro Components</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Top SQL Statements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Top JCO Calls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J2EE</td>
<td>HTTP Sessions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portal Activity Reporting</td>
<td>Number of Named Users</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Most Frequently visited iViews</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Most Frequently visited pages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRMG</td>
<td>Availability</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Customers with specific reporting needs or interest on history, detailed analysis and high quality graphics. They must be able to build their own reporting in BI for more than one system for several KPI’s and several time intervals.

SAP EarlyWatch Alert data which provides a large data pool of KPI’s and other information will come together with Solution Manager Landscape Data (SMSY) in BI for more than one system.

SAP EarlyWatch Alert together with Solution Manager Landscape Data can provide information (Products, Components, Support Packages, …) for BI queries. This can be combined with CPH (Central Performance History) data for common queries.

Users are IT Manager and IT Provider to get an flexible, detailed reporting for KPI’s to recognize tendencies and analyze complex problems.
# Selected KPI’s for BI

Close to 100 KPI’s will be reported to the BI system!

<table>
<thead>
<tr>
<th>System</th>
<th>Sys. Data</th>
<th>Performance</th>
<th>Modul</th>
<th>Server</th>
<th>Database (z.B. DB MSSQL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product and Version</td>
<td>Users (H,M,L)</td>
<td>Current Workload (ST03)</td>
<td>Workload by Application Module (CPU + DB)</td>
<td>Server (CPU + Paging)</td>
<td>System Activity Overview</td>
</tr>
<tr>
<td>Database and Release</td>
<td>ABAP Dumps</td>
<td>Time Profile (ST03)</td>
<td>Load by Application Modul</td>
<td>CPU Utilization</td>
<td>Missing Indices</td>
</tr>
<tr>
<td>Components and Version</td>
<td>System Availability</td>
<td>Transaction by DB Load</td>
<td>Selected Business Process Transactions</td>
<td>Memory Utilization</td>
<td>I/O Performance</td>
</tr>
<tr>
<td>Notes and Version</td>
<td>Update Errors</td>
<td>History of Response Times</td>
<td></td>
<td>OS-Parameter</td>
<td>Wait Statistics</td>
</tr>
<tr>
<td>Support Packages</td>
<td>Server List</td>
<td>Response Times of Transactions</td>
<td></td>
<td>Profile Parameter</td>
<td>DB Growth</td>
</tr>
<tr>
<td>Hardware (OS, CPU, Memory)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DB Freespace</td>
</tr>
<tr>
<td>Kernel and Release</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For additional and updated information, visit the SAP Service Marketplace at

www.service.sap.com/ewa

- Detailed Content and Benefits
- Technical Prerequisites
- Click Media Library, PDF Datei, Sample Report with Explanation

Check www.service.sap.com/rkt-solman >> Technology Consultant for SAP Tutors regarding setup of EWA
Reporting Concept
EWA Reporting
Service Level Reporting
Solution Reporting
Summary
What is Service Level Management

Service Level Management (SLM)
- The disciplined, proactive methodology and procedures used to ensure that adequate levels of service are delivered to all IT users in accordance with business priorities and at acceptable cost.

Service Level Agreement (SLA)
- Agreement on quality of services between service customer and service provider
  - Business Process Owner (BPO) and IT Organization
  - IT Organization and Business Partner (hardware partner, software partner, implementation partner, outsourcing partner)

Service Level Reporting (SLR)
- The IT department measures and periodically communicates the agreed service goals.
Key Performance Indicators (KPIs)

KPIs should be defined to quantify and verify the success of business process management and operation in order to support and ensure that the defined business objectives are met.

- KPIs are somehow associated with business-related or business-wise indicators such as:
  - Average business transaction response time
  - Document throughput
- KPIs are used to check and ensure the performance of the business processes.
- KPIs are used to ensure a stable solution environment with performant processing.
- KPIs can be used as Service Level Agreements (SLAs).
- SLAs and their adherence are related to certain agreements (more technical) between different service levels or organizational units (such as system availability etc.)
Service Level (SL) Reporting

Task

- Comprehensive service level management and reporting to administrators and customers

Target Group

- IT Organizations
- IT Service Provider

Benefits

- Summarizing several EWAs in one report
- Additional data, target values and rating possibilities
- Support of strategic decisions
- Recommendation of optimizations
- Follow-up of Tasks
- -> Easing service level management
SL Reporting – Data Collection

SAP Solution Manager

Critical Alert Situations:

Business Process Monitoring

System Monitoring

Satellite Systems

Real-time Monitoring:
CCMS Monitoring Infrastructure (RZ20)

Continuous Monitoring:
Service Data Download (SDCC)

Aggregated Business Process Alerts

Select Content and Summarize EWA Reports

SAP EarlyWatch Alerts

Detailed Reporting

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Early Watch Alert (EWA) and SL Reporting

1. **Satellite Systems**
   - Collect Data
   - Send Early Watch Alert (EWA) Data
   - Central Performance History (CPH)

2. **SAP Solution Manager**
   - Aggregate EWA Data
   - Generate Service Level Report
   - Forward Report

3. **Process Owner/Business Partner**
   - Check Report
   - Root-Cause Analysis
Additional Functionality regarding EWA

- Accounting profile (analyse number of dialogsteps, responsetimes, CPU load etc. with the help of SU01)
- Transports (objects, programs, tables \(\rightarrow\) Tab. E070)
- Average responsetimes of self-defined Transactions
- Aggregated alerts out of Business Process Monitoring (background job reporting possible)
- Trend analysis regarding:
  - System activity
  - Response time
  - System operation
  - Hardware (CPU Load Appl. Server and DB Server)
Service Level Reporting – News with SAP Solution Manager 7.0

Maintenance of thresholds for individual KPIs

Monthly KPI Reporting
- Report Type "Monthly" returns monthly data (used to be based on weekly data)
- Availability since ST-SER 700_2005_2
- Current Limitations:
  - BW for "Query Performance" still weekly.
  - Data for systems < 4.6C still weekly

History for KPIs
- A 12 month history is available for all KPI (Report Type "Monthly")
- The history is displayed in table and chart format per KPI.

Integration of Central Performance History
### System Target KPIs

<table>
<thead>
<tr>
<th>Area</th>
<th>Indicator</th>
<th>Target Value</th>
<th>Unit</th>
<th>Rating Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Performance</td>
<td>Max Active Users</td>
<td></td>
<td></td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>Avg. Availability</td>
<td>25</td>
<td>%</td>
<td>Red alert if indicator falls below target</td>
</tr>
<tr>
<td></td>
<td>Avg. Response Time in Dialog Task</td>
<td>1.298</td>
<td>ms</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>Avg. Response Time at Peak Dialog Hour</td>
<td>1.456</td>
<td>ms</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>Max. Dialog Steps per Hour</td>
<td></td>
<td></td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td>Query Performance</td>
<td>Avg. Total Runtime of the BW Queries</td>
<td></td>
<td>ms</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>Avg. DB Runtime of the BW Queries</td>
<td></td>
<td>ms</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td>Database Performance</td>
<td>Avg. DB Request Time in Dialog Task</td>
<td>4.38</td>
<td>ms</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>Avg. DB Request Time in Update Task</td>
<td>0.03</td>
<td>ms</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td>Database Space Management</td>
<td>DB Size</td>
<td></td>
<td>GB</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>DB Growth</td>
<td></td>
<td></td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td>Hardware Capacity</td>
<td>Max. CPU Utilization on DB Server</td>
<td>70</td>
<td>%</td>
<td>Red alert if indicator exceeds target</td>
</tr>
<tr>
<td></td>
<td>Max. CPU Utilization on App. Server</td>
<td>70</td>
<td>%</td>
<td>Red alert if indicator exceeds target</td>
</tr>
</tbody>
</table>
**Example:** Target values and dependent rating

<table>
<thead>
<tr>
<th><strong>Performance Indicators</strong></th>
<th><strong>Indicator</strong></th>
<th><strong>Actual Value</strong></th>
<th><strong>Target Value</strong></th>
<th><strong>Rating</strong></th>
<th><strong>Trend</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>System Performance</td>
<td>Max. Active Users</td>
<td>102</td>
<td>-</td>
<td></td>
<td>steady</td>
</tr>
<tr>
<td></td>
<td>Avg. Availability</td>
<td>78.14 %</td>
<td>95 %</td>
<td>✖️</td>
<td>steady</td>
</tr>
<tr>
<td></td>
<td>Avg. Response Time at Peak Dialog Hour</td>
<td>1307 ms</td>
<td>1400 ms</td>
<td>✔️</td>
<td>steady</td>
</tr>
<tr>
<td></td>
<td>Avg. Response Time in Dialog Task</td>
<td>1245 ms</td>
<td>1200 ms</td>
<td>✖️</td>
<td>steady</td>
</tr>
<tr>
<td></td>
<td>Max. Dialog Steps per Hour</td>
<td>12303</td>
<td>-</td>
<td>✔️</td>
<td>steady</td>
</tr>
<tr>
<td>Database Space Management</td>
<td>DB Size</td>
<td>890 GB</td>
<td>-</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>DB Growth</td>
<td>15 GB</td>
<td>-</td>
<td>✖️</td>
<td>-</td>
</tr>
<tr>
<td>Database Performance</td>
<td>Avg. DB Request Time in Dialog Task</td>
<td>392 ms</td>
<td>600 ms</td>
<td>✔️</td>
<td>steady</td>
</tr>
<tr>
<td></td>
<td>Avg. DB Request Time in Update Task</td>
<td>299 ms</td>
<td>800 ms</td>
<td>✔️</td>
<td>steady</td>
</tr>
</tbody>
</table>

- KPIs, without KPI Targets are displayed without Rating ( ) –
- Ratings are red ( ✖️) or green ( ✔️)
Example: History for KPI "Avg. Response Time in Dialog Task"

<table>
<thead>
<tr>
<th>Month</th>
<th>Actual</th>
<th>Target</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 2004</td>
<td>734 ms</td>
<td>1200 ms</td>
<td>✔</td>
</tr>
<tr>
<td>May 2004</td>
<td>4395 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Jun 2004</td>
<td>1703 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Jul 2004</td>
<td>1198 ms</td>
<td>1200 ms</td>
<td>✔</td>
</tr>
<tr>
<td>Aug 2004</td>
<td>1403 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Sep 2004</td>
<td>1609 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Oct 2004</td>
<td>1811 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Nov 2004</td>
<td>888 ms</td>
<td>1200 ms</td>
<td>✔</td>
</tr>
<tr>
<td>Dez 2004</td>
<td>1933 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Jan 2005</td>
<td>1102 ms</td>
<td>1200 ms</td>
<td>✔</td>
</tr>
<tr>
<td>Feb 2005</td>
<td>1603 ms</td>
<td>1200 ms</td>
<td>✗</td>
</tr>
<tr>
<td>Mar 2005</td>
<td>1110 ms</td>
<td>1200 ms</td>
<td>✔</td>
</tr>
</tbody>
</table>

KPI History - Avg. Dialog Response Time

Within target

Out of target
KPI Reporting Architecture

**SAP Solution Manager**

- Collected EWA Data
  - + Business Process Data
  - + Additional Service Data

**SAP NetWeaver BI**

- EWA BI Content
  - BI Queries
  - CPH BW Content

**CCMS Monitoring Infrastructure**

- Central Performance History

**System 1**

- EWA Data
- CCMS

**System 2**

- EWA Data
- CCMS

... (Ellipsis indicating additional systems)

**System n**

- EWA Data
- CCMS

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Solution Reporting – New Header in Operations

New header for all reporting functionality within a solution except for EWA and SLR

New reporting functionalities:
- Service Reporting
- Central System Administration Reporting
- Availability Reporting
- Service Desk Reporting
- Change Request Management Reporting

EWA and SL Reporting still under the header Solution Monitoring
Management Summary

- This tool allows you to create custom reports for solutions and systems for which you have maintained in transaction SMSY, scheduled a SAP EarlyWatch Alert or GoingLive service.
- You can activate the pre-selected default values, or you can insert or add any other check tables from the SAP EarlyWatch Alert service.
- The results can be displayed in a tree or list view. You can also export the data and process it in Microsoft Excel.
- Once you have configured a report, you can save a variant in order to regenerate the report at any time.
Business Value/Benefits

- Flexible selection of data allows the summary of all relevant solution, system and product data within one list
- Allows IT administrators a fast overview regarding component levels, implemented notes, users and KPIs
- Display of selected data in variants allow clear information for other users like managers and support team members
- Download to Microsoft Excel allows fast integration in self-defined Service Level Reports
Service Reporting - Selection

- Selection of standard services
- Selection of systems to be included
- Add selection parameters

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Service Reporting - Results

- Flexible list display (ALV)
- EXCEL download possible
- Selection of service data
- Add or remove any service session content
- Detailed selection, e.g. compare implemented SAP notes and system parameters (EWA Viewer)

Solution Reporting result screen
System Availability Reporting - Selection

Selection of systems to be reported of

Manual maintenance of system availability (status of system availability has often to be clarified personally with customers)

To selection details
### System Availability Reporting - Results

#### Reporting results

<table>
<thead>
<tr>
<th>SID</th>
<th>Installation number</th>
<th>Date</th>
<th>Available</th>
<th>Comments</th>
<th>Planned</th>
<th>Downtime f</th>
<th>Downtime u</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050905</td>
<td>100</td>
<td>Protocol data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050904</td>
<td></td>
<td>×</td>
<td>120000</td>
<td>123000</td>
<td></td>
<td>Implement Notes</td>
</tr>
<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050903</td>
<td>96</td>
<td>No protocol d</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050902</td>
<td>100</td>
<td>Protocol data</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050901</td>
<td>100</td>
<td>Protocol data</td>
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<td>0120021077</td>
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<td>100</td>
<td>Protocol data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050830</td>
<td>100</td>
<td>Protocol data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STE</td>
<td>0120021077</td>
<td>20050829</td>
<td>100</td>
<td>Protocol data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Typical Questions to be answered by Service Desk Reporting

How many incidents were reported?
- For a given time intervall, per organization, per SAP component

How long did it take to complete incidents?
- Overall and specific
- How many were solved with the internal solution database? How many with SAP notes? How many with help from SAP?
- How many were converted into how many change requests?

Which incidents are in process/completed ...?
- By service desk employee/organization
Service Desk Reporting - Selection

### Analyze Service Desk Messages

**Analysis Type**
- [ ] Organizational Units
- [ ] Status Analysis
- [ ] Solution Information

**Time Interval**
- From: [ ]
- To: [ ]

**System Attributes**
- System Name:
- Installation Number:
- System ID:
- Client:

**Business Partner**
- [ ]

**Message Attributes**
- Priority:
- SAP Component:
- Category:

**System Status**
- [ ] Open
- [ ] In Process
- [ ] Released
- [ ] Completed

**User Status**
- [ ]

**Subject**
- [ ]
- [ ]
- [ ]

**Used for message solution**
- [ ] Solution database was used
- [ ] Solved by SAP Note
- [ ] Message Created Change Request

**Grouping**
- [ ]
Typical Questions to be answered by ChaRM Reporting

Which change requests are in process/completed ...?
- By status, type, next steps, maintenance window

How long do change requests take to be completed?
- Per organization, user, type, step

Which transports belong to which change request and vice versa?

What is the current transport status (in which system)?

How many incidents triggered a change request?
- Per organization, SAP component

How many change requests were declined?
- Per organization, user, type, by whom and why
Change Management Reporting - Selection

Selection Screen
Solution Reporting

Summary
SAP Solution Manager

- Collected EWA Data
- + Business Process Data
- + Additional Service Data

CCMS Monitoring Infrastructure

SAP NetWeaver BI

- EWA for non-ABAP
- Availability Reporting
- Service Level Reporting
- Service Reporting

- EWA BI Content
- New Standard Content
- Predefined Queries

System 1
- EWA Data
- CCMS

System 2
- EWA Data
- CCMS

... System n
- EWA Data
- CCMS

Central Performance History

New Feature with SAP Solution Manager 7.0 (4.0)
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