cenit

CASE STUDY

SERVICETRACE® AUTOMATED TESTING
IN SOFTWARE DEVELOPMENT AT CENIT

*"High service quality means end-user satisfaction.
Optimizing service quality starts with regular,
early, and automated software tests."*

BERNHARD KIENZLE
Service Manager, EIM Systems Management, CENIT

CENIT AND SERVICETRACE
— FIVE YEARS OF DEVELOPING SOLUTIONS TOGETHER

Since 2010, software and consulting firm CENIT AG has been integrating monitoring software from ServiceTrace GmbH into its own portfolio of solutions. CENIT has also been using Service-Tracer® for automated software testing in-house since 2014.

Established in 1988, *CENIT* is a leading *software and consulting specialist* in the optimization of business processes in the following fields: *Digital Factory*, *Product Lifecycle Management (PLM)*, *SAP Solutions*, *Enterprise Information Management (EIM)*, *Business Intelligence (BI)*, and *Application Management Services (AMS)*.

CENIT develops proven, proprietary software based on standard solutions from strategic partners such as DASSAULT SYSTEMES, SAP, and IBM. Examples include the FASTSUITE product family for software solutions in the Digital Factory field, cenitCONNECT for processes relating to SAP PLM, cenitSPIN as a powerful PLM desktop, CENIT ECLISO for efficient information management, and CENIT SERVICEMANAGER for integrating software systems into an Enterprise Content Management (ECM) system.

The company employs approximately 700 people around the world and has customers from industries such as automotive, aerospace, mechanical engineering, tool and mold/die making, financial services, trade, and consumer goods.

ServiceTrace is the technological market leader in the IT service management (ITSM) segment for GUI-based end-to-end monitoring. In ServiceTracer®, the company provides a modular, multi-client capable business solution for automated, user-centered IT quality assurance throughout the service lifecycle of business-critical applications.

Prior to rolling out new or modified applications, ServiceTracer® is used for automated function testing, and load, predeployment, and regression tests in order to assure quality.

In service operations, ServiceTracer® monitors application quality for users from end to end, 24/7. The ServiceTracer® Dashboard provides information on the present status of monitored systems, while ServiceTracer® Alerting enables proactive incident management and accelerates error analysis and resolution. ServiceTracer® Reporting informatively documents application quality across different sites over defined time frames.

ASSURING IT SERVICE QUALITY, PART 1: MONITORING IT SERVICE OPERATIONS FROM THE USER'S PERSPECTIVE

A software and consulting firm based in Stuttgart, Germany, *CENIT has been using ServiceTracer® as an end-to-end monitoring tool since 2010*: "Performance plays an important role in user satisfaction. Response time measurements must therefore be taken from the user's perspective. That means measuring what actually appears on the user's desktop – at every location."

Adding ServiceTracer® to IBM ECM system monitoring allows response times to be measured in a user-centered way (see *Service Quality Assurance for ECM Applications*).

ASSURING IT SERVICE QUALITY, PART 2: AUTOMATED SOFTWARE TESTING PRIOR TO ROLL-OUT

CENIT now not only uses software from Darmstadt-based Service-Trace GmbH exclusively as an end-to-end monitoring solution for assuring the service quality of day-to-day IT operations.

The company also deploys ServiceTracer® as a test automation tool for quality assurance prior to roll-out in the productive environment.

"High service quality contributes significantly to end-user satisfaction and departmental productivity."

Bernhard Kienzle, Service Manager, EIM Systems Management, CENIT

STRAIGHTFORWARD TESTING
OF PROPRIETARY DEVELOPMENTS

At CENIT, proprietary software products are developed for the main EIM and PLM business segments. There is no centralized or dedicated department for testing these in-house developments. The departments perform such activities themselves.

When it comes to a test automation tool, it is important therefore that departmental users at CENIT are able to set up test processes independently.

ServiceTracer® meets this requirement superbly because the cross-application software controls everything with a desktop GUI. It is impressively *easy to set up and adapt the workflow* for automated user simulation.

SOFTWARE TESTS:
MANUAL OR DIGITAL

Until 2014, it was customary for CENIT departments to test new software manually in its entirety for functionality, performance, and the absence of errors at the end of the development phase.

This approach is resource-intensive in terms of time, financial costs, and staff. This is because multiple software testers have to go through all use cases in the application over an extended period.

Other disadvantages of manual software testing are that the human element increases error-proneness; repeatability and reuse are complex and time-consuming, and consistency is poor. By contrast, automated test cases are fast, reproducible, consistent, and well documented.[1]

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1   See the University of Paderborn, computer science department (http://is.uni-paderborn.de/en/research-group/fg-engels/research/themen/test-automation.html)

REAL-LIFE EXAMPLE:
FASTSUITE FOR V5 TEST SCENARIO

CENIT's *Digital Factory Solutions* department decided when developing *FASTSUITE for V5* to use ServiceTracer® for automated quality testing.

The successful and specialized FASTSUITE for V5 manufacturing solutions allow efficient, advanced process automation in the areas of robot simulation and offline programming, NC manufacturing, as well as enabling product information that is relevant to manufacturing to be generated automatically.

FASTSUITE for V5 is fully and seamlessly integrated into CATIA and DELMIA, thereby supporting manufacturing processes with maximum efficiency. Thanks to a long-standing CAA development partnership with Dassault Systèmes, CENIT uses this software platform to guarantee continuous, reliable processes.

FASTSUITE for V5 enables more than 500 CENIT customers around the world from sectors such as automotive, aerospace, toolmaking, and mechanical engineering to program, simulate, and optimize their production environments.
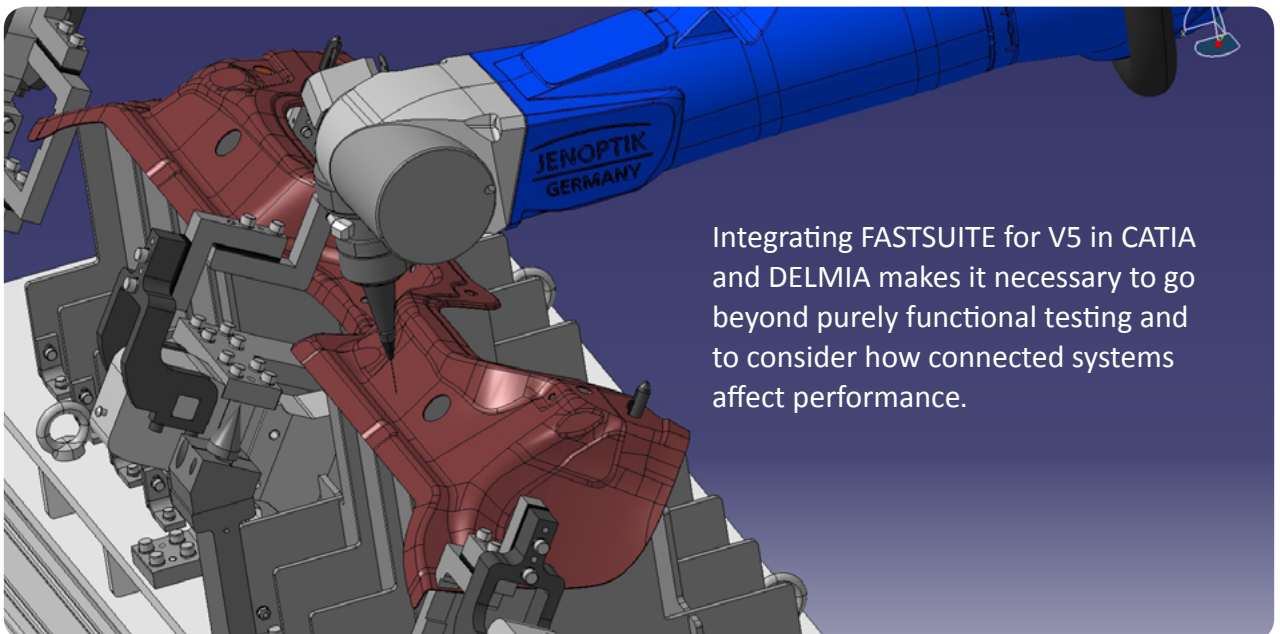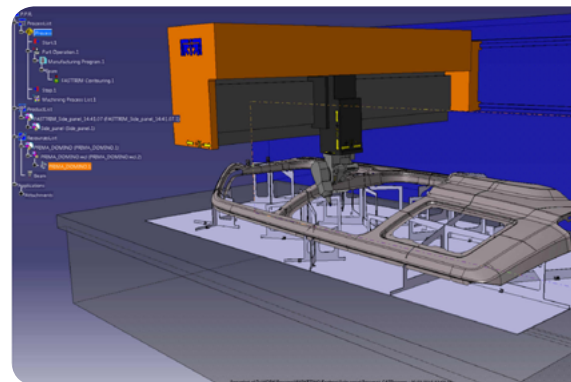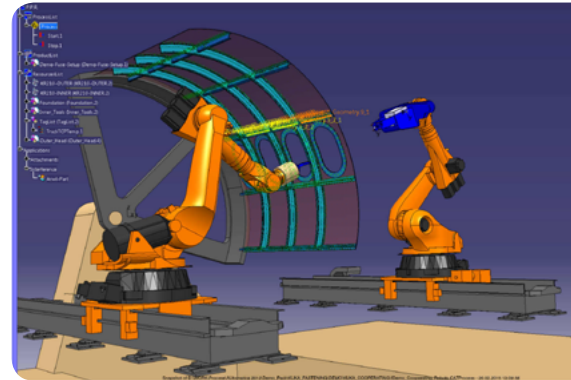
Integrating FASTSUITE for V5 in CATIA and DELMIA makes it necessary to go beyond purely functional testing and to consider how connected systems affect performance.

# AGILE TESTING AS PART OF SERVICE DESIGN: FOCUS ON FUNCTIONALITY AND PERFORMANCE

FASTSUITE for V5 has been developed in C++ and CAA and executes on a rich client. After each iteration – initially daily and subsequently hourly – ServiceTracer® tests the quality of the present build of existing software on the FASTSUITE GUI.

The following are relevant for developers:

- whether the workflow completes (functionality)

- how fast the workflow completes (performance)

Developers receive the results of test runs via the automated *ServiceTracer® Reporting* module.

If transactions in the present build have longer response times than in the previous one (see figure below), developers are quickly able to isolate the cause and make appropriate adjustments for the next build.
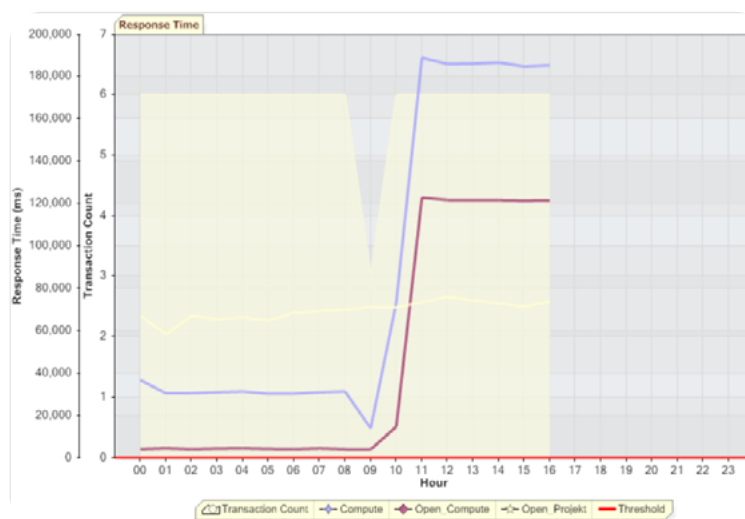
The annex shows the FASTSUITE for V5 test workflow.

"The development team at CENIT is pleased to be using ServiceTracer.

It takes just a short time to reproduce any workflow in FASTSUITE for V5."

Roland Merkt, Head of EIM Systems Management, CENIT

AUTOMATING THE USE CASE:
THE TEST WORKFLOW

The overview below shows the FASTSUITE for V5 test work-
flow as created using *ServiceTracer® WorkflowEditor*.
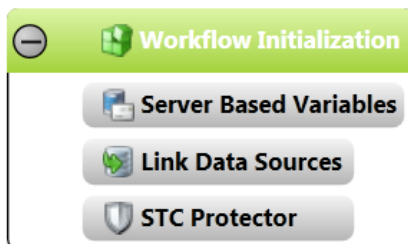
- The green "Workflow Initialization" box defines key par-
  ameters for executing the workflow such as automated
  error handling or integrating variables for parameterized
  measurement processes.
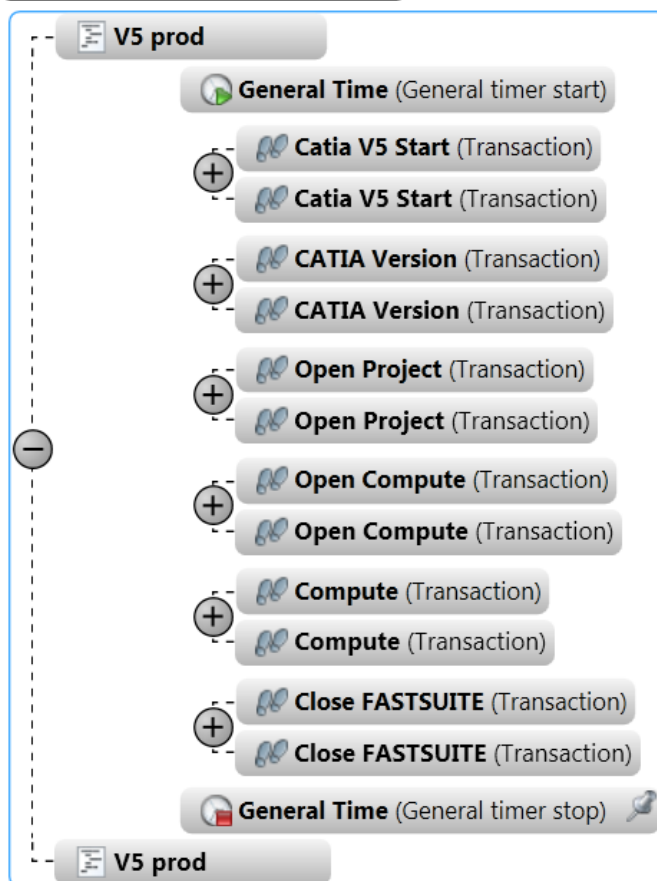
- The "General Timer" measures the
  duration of the test workflow's total
  run

- The workflow itself consists of
  "Transactions" which arrange the
  workflow into clear and logical units.

- The transactions contain "Action
  Steps" which reproduce the
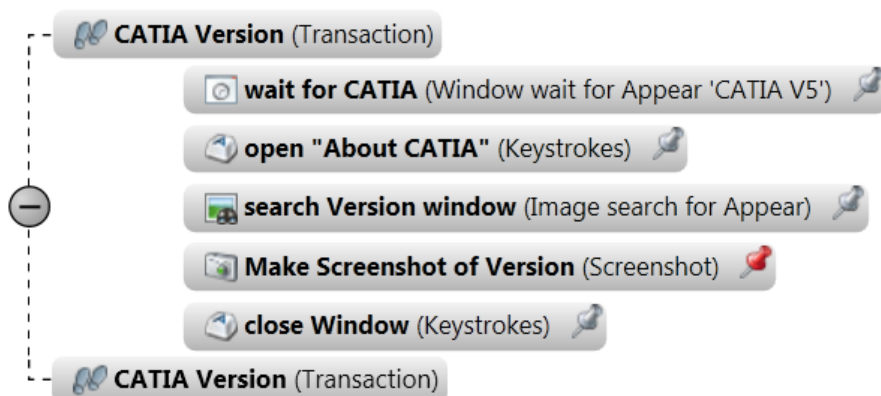 user actions to be carried
  out (not expanded here).

The individual transactions within the FASTSUITE for V5
test workflow are shown in detail over the next few pages.
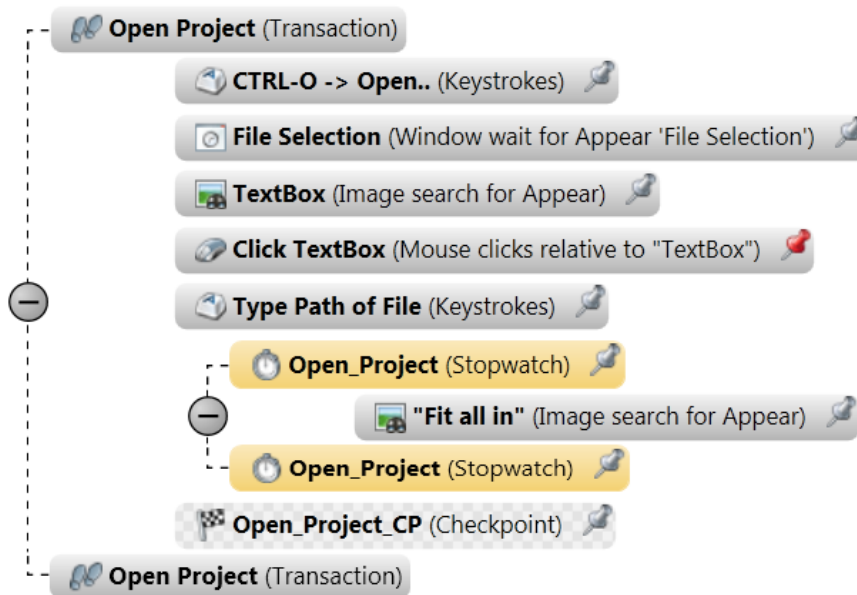
■ Transaction 1
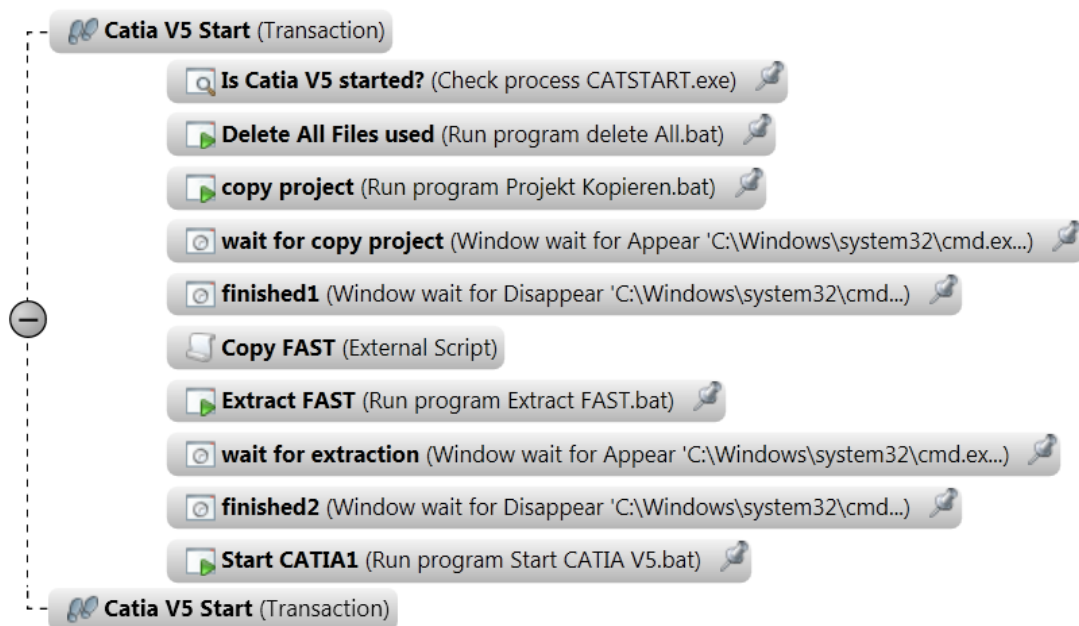
copies the present software status from FASTSUITE for V5 to the test system.

■ Transaction 2
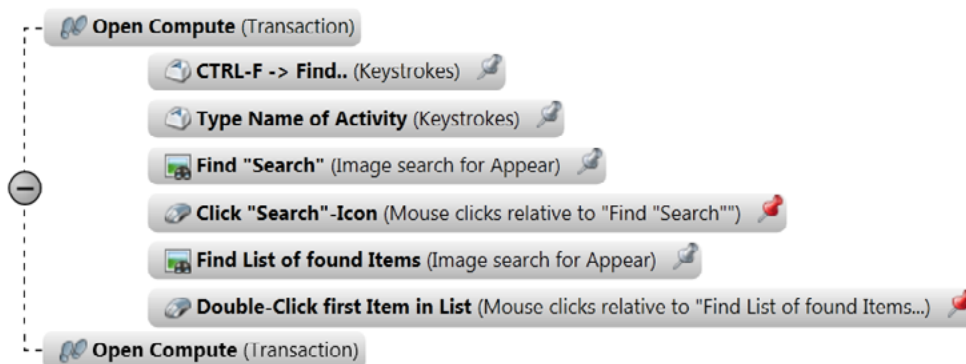

launches CATIA or DELMIA V5.

- Transaction 3

- *Stopwatch* measurement point: measures the **response time**

- *Checkpoint* measurement point: measures the **availability** of defined parts of the workflow
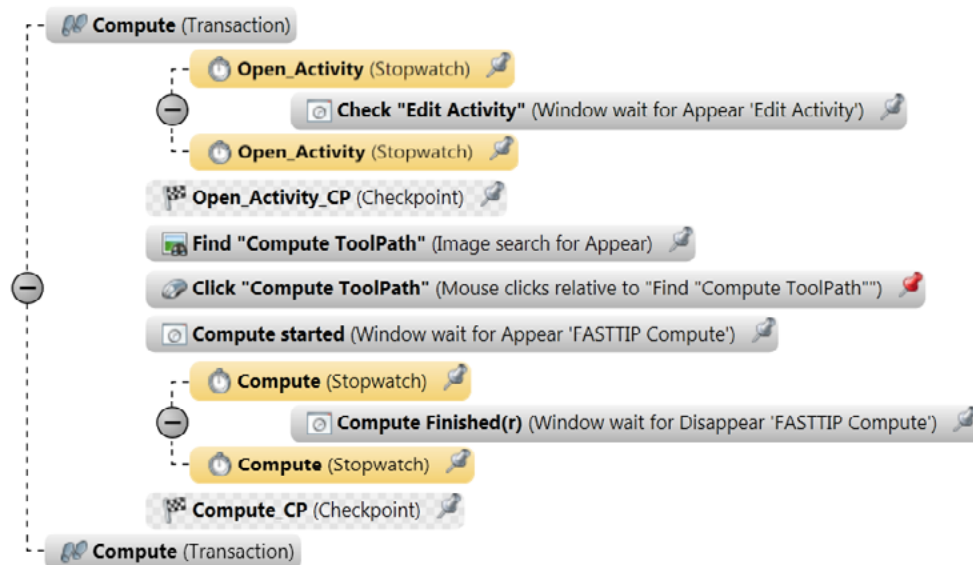
opens a project file.

The time taken to open a defined process is measured here.

- Transaction 4

opens the dialog box where the user can define parameters and geometries.

■ Transaction 5

measures the time taken to calculate an operation to gener-
ate simulation data. This transaction reproduces a subpro-
cess which has a substantial effect on the duration of the
measurement process as a whole. It therefore represents a
critical factor affecting user satisfaction.

■ Transaction 6
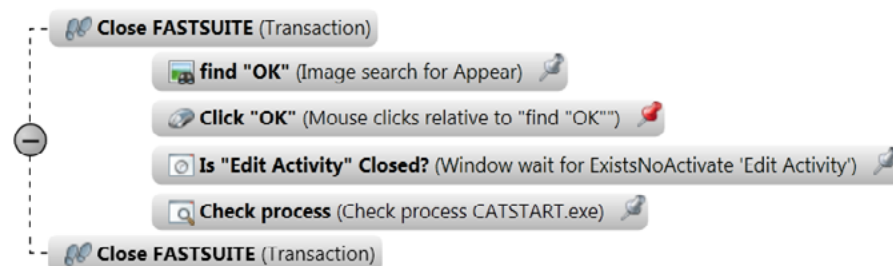
closes CATIA/DELMIA and FASTSUITE V5.
The ServiceTracer® test workflow is now finished.

SERVICETRACER® SOFTWARE TESTING: BENEFITS

- Assure software quality from the user's perspective

- Initiate a quality process right from the design and transition phase of the application lifecycle to optimize roll-out across service operations

- Very little programming skill required: Departments set up workflows independently and adapt them optimally to the applications they have developed

- Reduce the staff, time, and financial costs that manual testing requires

- Standardized, automated test operations are consistent, reproducible, and well documented

- Check functionality and performance objectively

- Reports provide feedback to developers for agile optimization of the next build

Whitepaper

IT Quality Assurance Throughout the Service Lifecycle

Download

SERVICETRACE PARTNER

CENIT AG

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