

Highway 61 Task Flow Recorder™

Next generation development toolset for CICS.

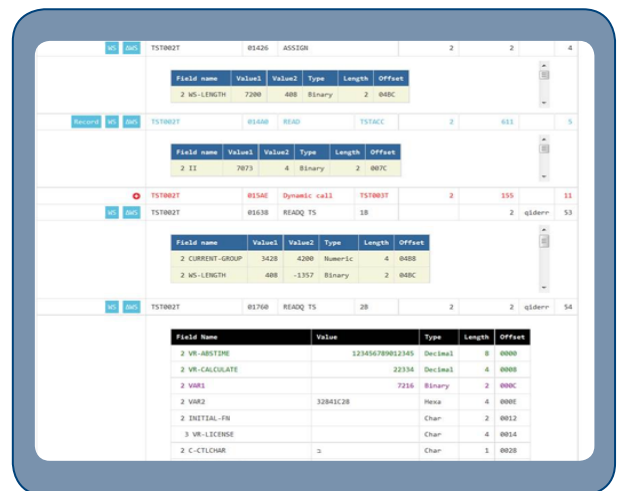
Highway 61 Task Flow Recorder provides a complete picture of a transaction's logical path, bottlenecks and resource usage.



Highway 61 Task Flow Recorder (TFR) records full program flows and event

sequences for selected CICS tasks, and measures elapsed time for each CICS command, code fragments between CICS commands, and subroutines invoked via EXEC CICS LINK, dynamic call or even static call.

Highway 61 TFR is easily activated by application developers without burdening systems programmers. Detailed results are immediately available on any browser using the product's elegant web GUI or via a 3270 terminal. Application developers, project managers, systems programmers and QA specialists will value the extensive and useful information provided by Highway 61 TFR. It records the actual content of COMMAREA, VSAM file records, TS QUEUE or TD QUEUE, screen input and output, containers, DB2 query re-



sults, IMS and Adabas record buffers. For example, if the event list of a task shows a WRITE command, it displays the content of the written record in both character and hexadecimal formats. The recorded content can also be mapped and shown field by field, using the COBOL copybook associated with the record. The main interface is a browser web GUI.

Highway 61 TFR features a pre-processor which allows tracing every paragraph and section the recorded program has visited, even when the paragraph contains no CICS commands. It traces the values of selected working-storage and linkage section variables

during program execution. The product is able to take full working-storage snapshots after each CICS or database command. Using these snapshots, programmers are able to view the full content of the working-storage at any time during the program execution. Working-storage is displayed field by field, using the compiler-produced storage mapping. It also displays the Delta working-storage, i.e., only the variables that changed between two consecutive snapshots.

In order to lower the product's storage requirements, snapshots of working-storage, records and parameters are only taken when explicitly asked for.

Highway 61 TFR records selected transactions initiated by selected users from selected terminals or IP address, for a specified period of time or a specified

number of tasks. To lower the amount of data logged and saved, it can be set, as appropriate, to retain only tasks that either abended or ran longer than a specified threshold.

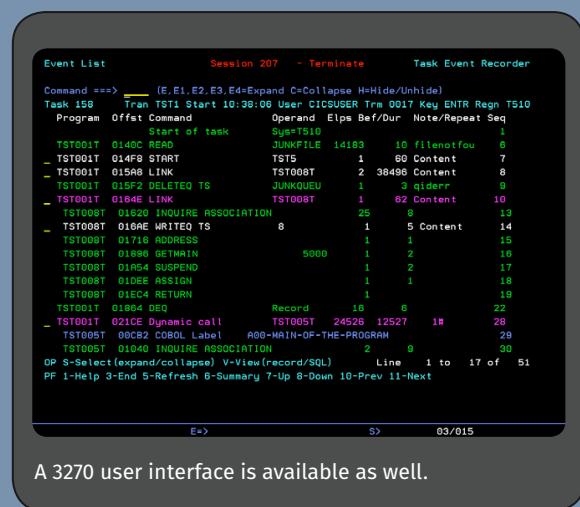
When CICS tasks make a Dynamic Call to other programs or a Static Call to other CSECTS within the same module, Highway 61 TFR detects the complete sequence of CALL and GOBACK commands, and adds these commands to the event log. It also records and displays CICS commands that are not part of the program code, but were inserted into the task by CICS itself. These commands include LOAD, PUSH HANDLE, POP HANDLE, GETMAIN, FREEMAIN, WRITEQ TD and others that most developers are not even aware of. Occasionally, related CICS tasks running at the same time communicate with each other. They synchronize

Highway 61 Task Flow Recorder Benefits

- ✓ Reduces software development and debugging time.
- ✓ Facilitates the training process for new staff which must deal with legacy applications.
- ✓ Facilitates the solving of production problems and bug detection.
- ✓ Identifies dead-lock situations in real time as they are occurring.
- ✓ Immediately shows when and why a particular program variable received an unexpected value.
- ✓ Reveals bottlenecks and pinpoints code fragments responsible for slow response times.
- ✓ Provides both a modern web GUI, as well as

the time-proven 3270 terminal interface.

- ✓ Can also serve as a full scale activity logger for sensitive transactions.
- ✓ Assists in creating accurate and useful software documentation.



their actions and wait for each other using ENQ, DEQ, DELAY, CANCEL, WAIT, POST, SEND, RECEIVE mechanisms. Highway 61 TFR presents the event lists together, side by side, in chronological order. This helps developers understand the synchronization between the tasks, the exact moments in which one task had yielded control to another, and the reasons for potential deadlocks. Software developers challenged with discovering why two instances of the same transaction vary significantly in their run time, flow path or the number of events, can use Highway 61 TFR's unique Task Diff utility. Diff compares two tasks, event

after event, and highlights the differences; similarly to a source-code version comparator.

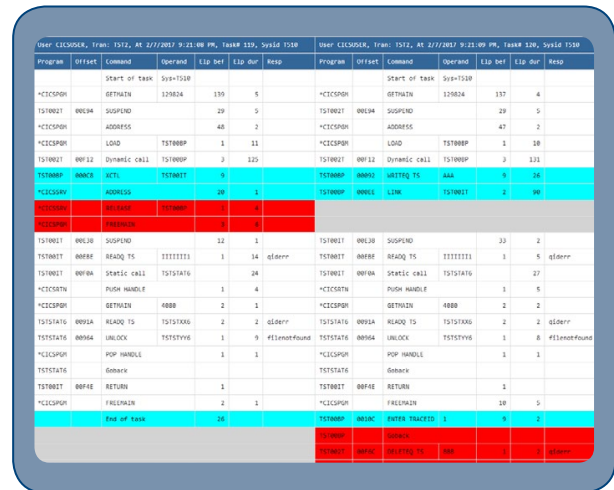
With Highway 61 TFR, there are no surprises and no question marks regarding what exactly the transactions are doing. It shows exactly what the code is doing, which programs call or link to a particular program and who accesses a particular file. A slow step-by-step debugger to track task activity is not needed. Running tasks normally, without CEDF and without breakpoints, Highway 61 TFR shows the complete sequence of events, working-storage variables,

Highway 61 Task Flow Recorder Features

- ✓ The exact execution flow of a CICS task. All CICS commands, Database calls, link and call between programs, mirror tasks, errors that were handled or caused an abend.
- ✓ Differences between two runs of the same transaction. What causes occasional increases in the response time of a particular query transaction?
- ✓ Which fields in a VSAM record had been modified by the program between the READ and the REWRITE?
- ✓ Which programs are called or linked to in each situation, and how many times?
- ✓ Which programs access particular DB2 tables or VSAM files and how many times?
- ✓ The content of commarea being passed, and which fields get updated when users hit a particular PF key.
- ✓ Time spent in each subroutine or code fragment.
- ✓ The impact of switching from CICS LINK to Dynamic Call.
- ✓ Exact occasion of each TCB switch and the total number of TCB switches that occurred.
- ✓ The sequence of events that took place in a remote mirror task.
- ✓ The overhead imposed by some rarely-used tools that are running all day.
- ✓ The value of each variable in your program at any given time during the run. Which fields in the working storage had changed their value since the previous CICS call?
- ✓ The sequence of control transfers among synchronized transactions that communicate with each other.

program parameters, records that have been read or written, and data that had been sent or received.

Highway 61 TFR increases the reliability of the change management process and the accuracy of quality assurance tests. Easily incorporated as an integral process in the deployment of application changes, it reduces the time and risks inherent in rolling out new mission critical software into production. Developers and quality assurance professionals are able to record transactions before and after changes, and to use Highway 61 TFR's Diff tool to compare program execution flow of the two versions. This comparison ensures that changes in the program event list are exactly what we expected.



About EasiRun

EasiRun is a European supplier of tools for software development modernization. With expertise in the areas of Mainframe, Java, .NET and COBOL (Linux, UNIX, Windows) the company focuses on Eclipse IDEs, COBOL cross compilers, data management and web browser solutions. These solutions are relevant to very specific niches, enabling complex IT modernization and minimizing technical debt situations. Developed to ensure the sustainability and reusability of legacy applications, the project proven modern tools implemented by EasiRun aim to make IT landscapes independent and cost-effective. The wide range of consulting services cover the entire spectrum of the modernization of applications and application development.



For more information on Highway 61 Task Flow Recorder and other solutions offered by EasiRun please visit tools.easirun.com

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