

Scheduler Migration Supported by XINFO

This document will describe how XINFO can assist and support the migration of job scheduling systems in a variety of ways. It makes no difference which scheduler is used or in which direction the migration is to take place.

The following scheduling systems are presently integrated into XINFO (January 2004, Release 3.0):

- APM (HS5000)
- Bagjas
- CA-7
- CA-Scheduler
- Control-M (z/OS und distributed)
- TWS z/OS (OPC)
- TWS distributed
- UC4
- Zeke

Planning Migration

Every conversion project begins with a planning phase. A complete and comprehensive analysis of the scheduling environment is a basic requirement and will determine whether the conversion is a success or a failure.

Important questions are, for example:

- How many jobs have been defined, active or not active, how many are no longer being used?
- Which special features (resource control, return code control, JCL variables, JCL include/exclude, automatic restart, dataset triggering, etc.) are being used and how often?
- How many different date definitions (calendar and run definitions) are there?
- Which interfaces (automation, problem management, manual operations, etc.) are installed and how do these function?

These questions not only help when estimating time/cost but also form the basis for the strategy and the conversion process.

Standard utilities can only partly answer these questions and are very cumbersome to use. Scheduler reports are designed for daily operation and supply insufficient information for migrations. In addition, evaluating all the data often results in very long runtimes. During a migration, however, the data has to be monitored and evaluated quite frequently.

Analysis with XINFO

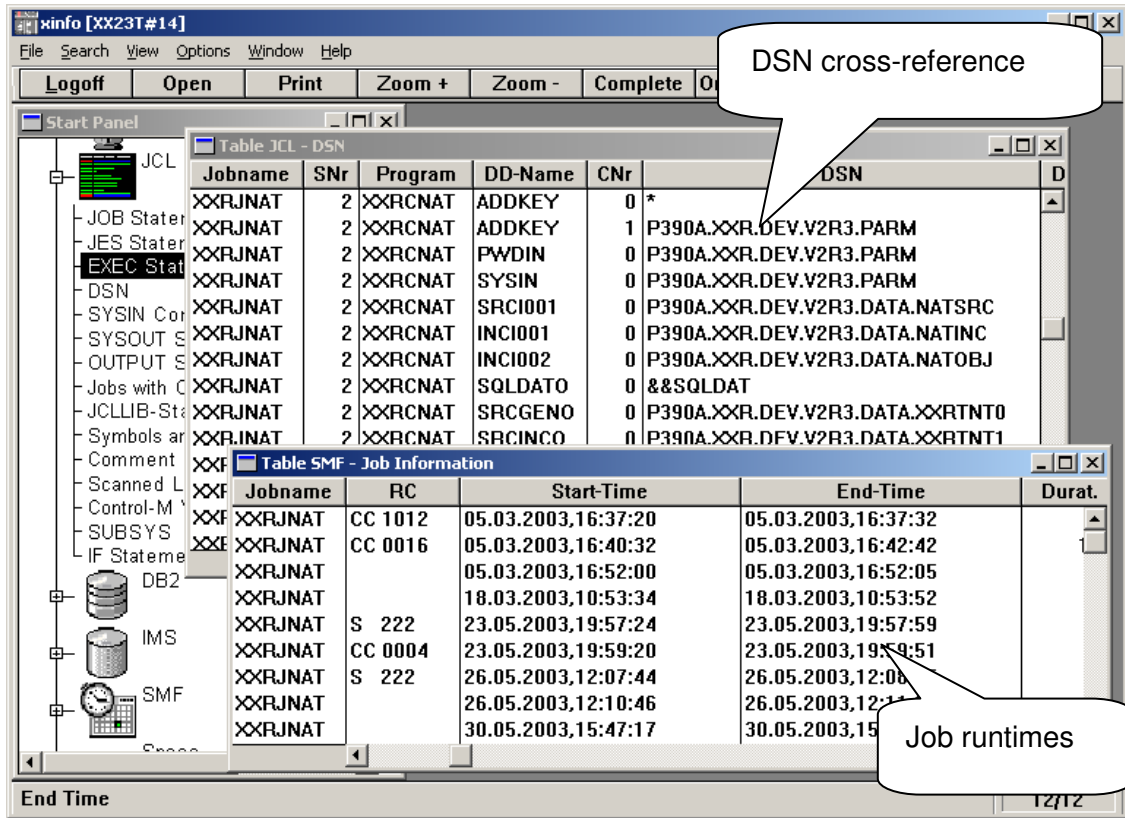
1. Fast XINFO scanners read scheduler definitions and JCL libraries, determine all scheduling parameters, render them into tables and output the information in sequential files. These are then loaded into DB2 or Oracle tables.
2. SMF data can also be read as needed in order to determine runtimes, frequency and resource usage of jobs and programs.
3. The XINFO dialog (Windows GUI and ISPF) can be used to perform every conceivable query and evaluation. There are special grouping and statistics functions available in the XINFO dialog that add and average values at the press of a button. In addition, XINFO provides extensive export filters (HTML, XML, EXCEL). XINFO uses a standard database (DB2 or ORACLE) and an open, documented, clearly organized data model. This means that other standard programs (ACCESS, EXCEL, SPUFI) or custom-made programs can also be used if necessary.

The screenshot shows the XINFO application window with a menu bar (File, Search, View, Options, Window, Help) and a toolbar (Logoff, Open, Print, Zoom +, Zoom -, Complete, Orientation). On the left is a 'Start Panel' tree view with nodes like Control-M, OPC, Application Common Segm, Run Cycles, Operation Data, Dependencies, Spec. Res./Application, Spec. Res. Definition, Run Cycles per Job, Current Plan, Long Term Plan, Calendar, Periods, Operator Instructions, ETT Criteria, Workstations, Workstation Intervals, JCL Variable Dependency, JCL Variable Tables, Job Run Times, and TWS. The 'Operation Data' node is selected, and a table titled 'Table OPC - Operation Data' is displayed. The table has columns: Application ID, WSID, ON, Jobname, and Description. A callout bubble points to the 'OPC' node in the tree and contains the text: 'For example, OPC data in XINFO (OPC=TWS for z/OS)'.

Application ID	WSID	ON	Jobname	Description
GUITEST	CPU1	010	XXRJJUP	UNLOAD JCL DATA
GUITEST	CPU2	016	XXRJCT1	UNLOAD DB2 DATA SI
GUITEST	CPU2	018	XXRJCT2	UNLOAD DB2 DATA SI
GUITEST	CPU1	020	XXRJPLT	ANALYSE DB2 DATA
GUITEST	CPU2	022	XXRJDBL2	LOAD DB2 TABLES
GUITEST	CPU1	024	XXRJPSB	UNLOAD IMS DATA
GUITEST	CPU2	026	XXRJDBL4	LOAD IMS TABLES
GUITEST	CPU1	028	XXRJLAD	UNLOAD OPC DATABA
GUITEST	CPU2	030	XXRJDBL3	LOAD OPC TABLES
GUITEST	CPU1	032	XXRJCP1	READ OPC JOB RUN 1
GUITEST	CPU1	038	XXRJMRG	MERGE JCL AND DB2
GUITEST	CPU2	040	XXRJDBL6	LOAD JCL-DB2 TABLE
GUITEST	CPU1	042	XXRJJO1	MERGE JCL AND IMS
GUITEST	CPU2	044	XXRJDBL5	LOAD JCL-IMS TABLE

4. For every scheduler there is a set of structured tables with all the scheduling parameters and options. All dependencies, resources, every single option, every flag can be determined, queried and evaluated using various methods.

- All information from the JCL including file dependencies (as graphics and tables) is also available to XINFO. Job definitions in the scheduling system often make up only a part of the functions used when running a job. That's why the JCL analysis is of vital importance.



All of this information is available online at any time to the entire project team and for batch analyses. Employees from other departments (e.g. application development) thus have access to important information that would otherwise be denied to them for lack of authorization.

The Conversion Process

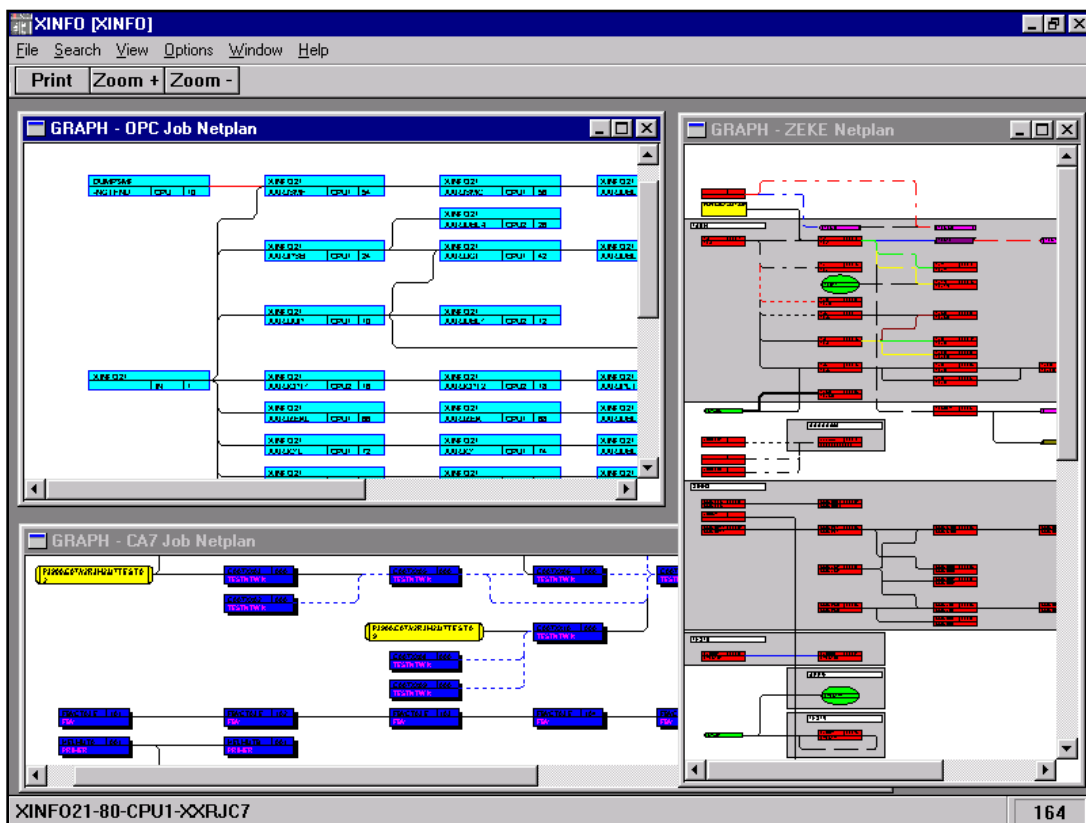
A concept for converting the definitions of the source system to the destination system must be drawn up after the analysis. This is of course depends greatly on the functions used and the possibilities of the destination system.

1. Dates and calendar

Most manufacturers provide more or less the same features for run date definitions. The way such run cycles, free day rules, postponements and the like are defined is different from scheduler to scheduler and is sometimes complicated. Having said that, only a few different combinations and rarely the complete range of functions are usually used in a scheduling environment. This means that these definitions, calendars, etc., can in part be manually converted.

2. Job nets

Job nets and dependencies are formed very differently (e.g. Control-M tables, OPC applications, CA-7 trigger chains, etc.). XINFO recognizes all of these methods and can also present the dependencies as graphics:



XINFO recognizes, for example, CA-7 SCHID logic and creates corresponding job trigger chains (such as FSTRUC). It recognizes Control-M IN/OUT conditions, AND/OR conditions, DO instructions, all Zeke event types, internal und external OPC predecessors, etc.

This information is available both as graphics (for manual monitoring) and in tables.

The table with the dependencies can serve as the input for a program (e.g. REXX) for generating new job nets. A Control-M table becomes an OPC application, an OPC application is turned into a CA-7 job stream with a specific SCHID, etc. In addition, other job options (e.g. job start time) can also be taken by the generation programs directly from the

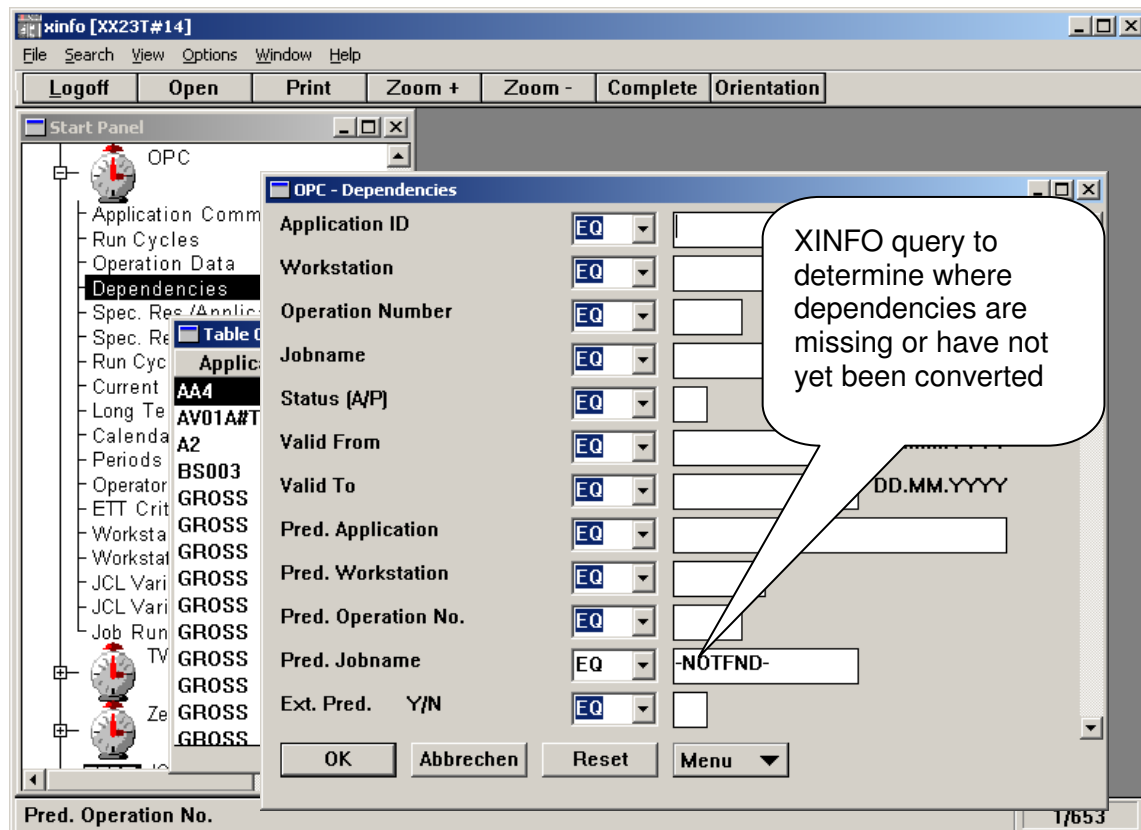
XINFO tables. The data is also available as a sequential file. Structures and data formats are revealed.

XINFO does not have its own generation program but has been frequently used as the basis for conversion programs. The time and expense needed to create a universal conversion program appears to be very high. The development of customized solutions that are tailored to the situation at a specific location is by contrast more cost-effective and such solutions can be developed quickly.

HORIZONT and its partners (independent, qualified experts with long years of experience) have a great wealth of knowledge in this area and the "tool kit" required.

Monitoring

During conversion, in which most likely the destination system takes on one application at a time from the source system, two scheduling system environments are running parallel to each other. Here too, XINFO helps you keep an overview of what's going on and provides numerous monitoring features. For example:



Any more questions? Just e-mail us at info@Horizont-it.com.