N2O Administrator

Reference Card

This Reference Card is applicable to **Administrators** of the NATURAL Organizer (N2O) Version 5.x software package. This version of N2O incorporates support for NATURAL 3.1, ADABAS 7, and PREDICT 4.

N2O is a Change Management tool used to control the maintenance and migration of DDMs, NATURAL objects, SYSERR messages, and PREDICT Metadata and objects throughout an Application Life Cycle.

N2O/3GL supports the migration of 3GL objects by interfacing with LIBRARIAN, PANVALET, ENDEVOR, and the IEBCOPY utility for MVS PDS.

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N2O Installation Requirements

- N2O is operating system independent and may be installed and executed on any IBM 390 and/or compatible mainframe that supports NATURAL 2.2.8 and above.
- N2O PREDICT migrations require PREDICT V3.1.0 or above.

Upgrading N2O or NATURAL

Autocompile and N2OEDIT, if in use, must be reinstalled when upgrading N2O or NATURAL.

SECURITRE Interface

As an alternative to N2O internal security, N2O interfaces with the Treehouse SECURITRE product to provide ACF2, TOP SECRET, or RACF security for N2O. The SECURITRE interface replaces the Function Profiles, Approval Profiles, PREDICT Profiles, 3GL/Other Profiles, and User Definitions. SECURITRE Version 2.2.1 or higher is required for the interface.
To activate the SECURITRE interface:

- Modify User-Exit 13, N2OUE13N, to identify the database where SECURITRE is installed.
- Set the SECURITRE field to YES on the Install Parms screen.

Emergency Recovery

The Emergency Recovery utility recovers the last archived version of an object from an N2O Archive file when N2O is unavailable. For example, a site has two databases and runs N2O on Database 1. Objects migrated to Database 2 are archived on Database 2. Database 1 crashes, rendering N2O temporarily unavailable. Then a problem is discovered on Database 2, requiring the previous version to be retrieved. To retrieve archived objects from Database 2, use the Emergency Recovery Utility.

Batch Customization Variables

N2O provides sample JCL in the N2OBATCH library for executing batch functions, such as batch migrations, catalog capture, and purge utilities. &Variables are automatically replaced by N2O when JCL is submitted to an internal reader.

Capture Utilities

Catalog Capture:

Reads source and compiled objects for a specified environment and updates the N2O Migration file with the list of DDMS, NATURAL objects, SYSERR messages, and PREDICT Metadata and objects found.

3GL/Other Catalog Capture:

Reads 3GL objects for a LIBRARIAN Master file, PANVALET library, PDS, and ENDEVOR stage; and updates the N2O Migration file with the list of objects found.

N2O User-Exits

N2O allows users to customize N2O functions through user-exits. These user-exits are NATURAL objects that can verify field values, provide additional security, and interface with other software.

N2OUE00NUser-ID Initialization
N2OUE99PTermination
N2OUERJEBatch Job Submission
N2OUE01NEvent Request
N2OUE02NObject Selection
N2OUE03NEvent Authorization
N2OUE04NEvent Completion
N2OUE05NCheckout/Checkin/Enrollment Utility
N2OUE06PUser-Defined Subsystem Menu
N2OUE07POn-line Autocompile
N2OUE08NDB2 DBRM JCL
N2OUE09NDB2 DBRM Generation
N2OUE10NBind DB2 Plan
N2OUE11N3GL/Other Autocompile
N2OUE12NN$_2$O Utilities
N2OUE13NSECURITRE Database
N2OUE14NSystem Product Information
N2OUE15NAutomatic Object Selection
N2OUE16NPassword and Cipher Initialization
N2OUE17NDetermination of Node
N2OUE20NTask Update Override
N2OUE21NBatch Autocompile
N2OUE22NBatch Parameters Override
N2OUE23NDirectory Reports
N2OUE24N3GL/OTHER Autocompile Job Separation
N2OUE25NAutocompile Steblib Support
N2OUE26NDDM Generation Selection

N2O Environment Subsystem

Define your sites Application Life Cycle to N2O using the Environment Subsystem options:

- **Node Definition** - Identify CPU or ADABAS SVC to N2O.
- **Archive Definition** - Relate an Archive File to a node and specify retention values.
- **Environment Definition** - Associate an FUSER/FDIC or 3GL dataset to an N2O Environment. Associate a Node and Archive (optional) to the Environment.
- **Migration Profile** - Define valid from/to paths for object migration. Specify options for Autocompile, Move/Copy, Authorization, etc.
- **Master Event** - Template used to request objects to be migrated. Master Event name and a sequence number identify a Migration Request. Events may be limited to specific Environment/Library combinations. Specify options for Project Tracking, Change Control, and Extract Events.
- **Administrative Utilities** - Maintain the N2O files.

Adding Users to Security

- Define Function Profiles to designate which N2O functions may be invoked by specific users.
- Define Approval Profiles to designate allowable migration paths for NATURAL objects and SYSERR messages.
- Define PREDICT and/or 3GL Profiles to designate allowable migration paths forDDMs, PREDICT Metadata and objects, and 3GL objects.
- Define User Definitions, associating the Profiles defined above, to designate migration paths and available N2O functions for specific users.
- After changing security, advise active users to “REFRESH” at the N2O Direct Command Line.

Checkout/Checkin

To activate Checkout/Checkin:

- Modify Install Parms to designate the level of Checkout/Checkin processing.
- Define BASE Environment Definitions for source repositories.
- Install N2OEDIT to prevent users from editing objects they did not check out.

Autocompile

NATURAL:

- Modify Migration Profiles to activate Autocompile.
- Sites using NATURAL 2.x should refer to the Autocompile **Installation** section of the *N2O Administrator Manual*.
- Modify NATURAL Security to give user access to CAT, SAVE, STOW, and EDIT.
- Initiate Autocompile for NATURAL programs with N2OCATI or modify N2OE04N (N2O User-Exit 4) to initiate Autocompile after the completion of an on-line event.

3GL:

- Modify Migration Profiles to activate Autocompile.
- Use User-Exit 11, N2OUE11N, to tailor 3GL Autocompile to site requirements.

Purge Utilities

THESE UTILITIES SHOULD BE USED ON A REGULAR BASIS TO MANAGE THE SIZE OF THE N2O ADABAS FILES.

Archive Purge:

A four-step batch job that removes object versions from the N2O-ARCHIVE file that exceed the retention value(s) specified on the Archive Definition.

Event Purge:

A two-step batch job that removes Events from the N2O-MIGRATION file that exceeds the retention value specified on the Install Parms or the Master Event.

N2OSCAN Administrative Delete:

Option from the Scan Utility Menu or a batch job to delete Output Scan Datasets from the N2O-MIGRATION file.

Administrator Direct Commands

N2O MENU	Main Menu
ENV MENU	Environment Subsystem Menu
ENV ARCH	Archive Definition Menu
ENV NODE	Node Definition Menu
ENV EVNT	Master Event Menu
ENV PARM	Install Parms Menu
ENV MIG	Migration Profile Menu
ENV DEF	Environment Definition Menu
ENV SEC	Security Subsystem Menu
ENV APPR	Approval Profile Menu
ENV FUNC	Function Profile Menu
ENV OTHR	3GL/Other Profiler Menu
ENV PRED	PREDICT Profile Menu
ENV USER	User Definition Menu
ENV UTIL	Administrative Utilities Menu
MIG MENU	Migration Subsystem Menu
MIG AUTH	Authorize Events Menu
MIG SUB	Batch JCL Submission Menu
MIG COCI	Checkout/Checkin Utilities Menu
MIG UTIL	Migration Utilities Menu
MIG REQ	Request Events Menu
MIG SERV	Service Events Menu
PRJ MENU	Project Tracking Subsystem Menu
PRJ PROJ	Project Definition Menu
PRJ TASK	Task List Menu
PRJ SUGG	Suggestion Box Menu
PRJ TUTL	Task Utilities Menu
PRJ REP	Project Tracking Reports Menu
REP MENU	Reporting Subsystem Menu
REP ENV	Environment Reporting Menu
REP EVNT	Event Reporting Menu
REP OBJ	Object Reporting Menu
REP STAT	Statistical Reporting Menu
TOL MENU	Toolbox Subsystem Menu
TOL DOC	Documentation Tools Menu
TOL MAIN	Maintenance Tools Menu
TOL PROG	Programmer Tools Menu
TOL SCAN	N2OSCAN Utility Menu
TOL SCEN	N2OSCAN Environment Function Menu
TOL SCLI	N2OSCAN Library Function Menu
SYS	<NATURAL System Command>

Entering N2O and a direct command enters N2O at the specified direct command.