NatQuery / NatCDC
Pre-Install Checklist
For
Windows & UNIX

Introduction

The purpose of this document is to provide the reader with an overview of both the information that must be available, and the actions that should take place, before an installation and configuration of NatQuery should be performed. While an installation of NatQuery can occur in minutes, the process of configuring NatQuery is more involved. This document therefore presents, in a checklist format, the pre-requisites and information that should be gathered and known in advance before a configuration is started so that quick configuration can be easily and rapidly accomplished.

Please note: When NatCDC is purchased as a separate tool, the work station requirements are the same as for NatQuery. Please use this NatQuery/NatCDC Pre-Install Checklist as a quide to ease both the installation and configuration process.

Workstation Requirements

NatQuery is an application that is installed onto a Microsoft Windows workstation. The requirements of this workstation are as follows:

☐ **Microsoft Windows Operating System (Any Windows O/S above version 3.1)**
It is strongly advised that the version of the Windows operating system be English.

☐ **10 MB of Free Hard Disk**
To accomplish an installation, approximately 6 MB of free space should be available on the workstation's hard drive. Additional free hard disk space should be available to hold extracted data (if extracted data is intended to be returned to the workstation).

☐ **Connectivity to Server**
NatQuery can move generated objects and data between the NatQuery workstation and the Natural / ADABAS server platform using either FTP or through the use of automated copy operations across a network.   A decision must therefore be made as to which of these methods should be used, or if either will be used.

If there is no intention of having the ability to automatically move objects and data between the NatQuery workstation and the Natural / ADABAS server platform, then connectivity (FTP or network copy operations) is not a requirement.

If FTP over TCP/IP integration is desired, then the workstation must have the hardware and software available to support a TCP/IP connection to the server, and users must be appropriately authorized to utilize FTP. Similarly, if internal file copy operations are to be used to achieve integration, then the workstation must have the means to network against the server machine (UNC and mapped drives are both supported), and users should have the Read / Write access authority.

☐ **Microsoft Internet Explorer (TCP/IP Integration Only)**
One method of automated integration between a NatQuery workstation and the remote Natural / ADABAS server platform is to use FTP over TCP/IP. The implementation of FTP by NatQuery utilizes a Dynamic Link Library (DLL) module called WININET.DLL that is made available by an installation of Microsoft Internet Explorer.

For other situations where automated FTP integration is desired, the version of WININET.DLL should be 4.0 or higher.

If Microsoft's Internet Explorer product is not installed on the workstation, then either manual integration will be used or Internet Explorer should be installed. Internet Explorer is obtainable free-of-charge and is downloadable from the Microsoft website.

For further information on NatQuery's use of Microsoft's WININET.DLL, including information as to how to determine the version present on a given Windows platform, please refer to the section in the NatQuery Installation and Operations Guide entitled Microsoft's WININET.DLL.

Server Requirements

The following requirements exist for the Natural / ADABAS server environment.

☐ **Software AG's Natural**
It is a requirement that Software AG's Natural 4GL must reside on the server, and it is strongly suggested that the version of Natural be currently under support by Software AG. Natural version 5.1.1 or higher is recommended.

☐ **Software AG's ADABAS**
While not being an absolute requirement (due to the fact that Natural can be used against data stores other than ADABAS), it is a general requirement that ADABAS exist on the server, and it is generally advised that the version of ADABAS be currently under support by SAG. ADABAS version 3.2 or higher is recommended.

☐ **Batch Natural Nucleus**
A batch Natural environment must exist to support the execution of extract requests and supporting processes.

☐ **Execution of Batch Requests**
There are two methods through which NatQuery can automatically execute a request against a remote UNIX or Windows machine: "Remote Execution" or "Remote Pickup". Depending on whether the server system is UNIX or Windows; it is possible that the desired method of integration may require additional third-party software. Beyond the

two supported methods of automatically executing processing requests, NatQuery / NatCDC generated scripts and related objects can be generated onto the installation workstation and then manually moved to the server and then manually executed, or automatically moved to the server and then manually executed, or variations on this theme.

With automated approaches, NatQuery begins the integration / execution process by placing the files needed for the batch execution of a specific request on the remote UNIX or Windows server. This action is optionally accomplished through automated FTP operations or it can be accomplished via internal file copy operations across a shared network.

With "Remote Execution", the user's workstation and the server environment must support the use of software that will allow the client "command line" remote execution against the remote environment.

For UNIX Servers, utility programs such as RSH and REXEC , both of which have Windows clients, are usually supported. Other programs that are available commercially are supported as well.

For Windows Servers, third-party software such as PSEXEC (www.sysinternals.com) support this type of integration / execution, other software is available commercially for this purpose as well.

To support Remote Execution, the administrator will need to understand the general command string necessary that NatQuery on the workstation will employ to invoke the remote execution, as this command string (with available dynamic substitution variables) will be used by NatQuery to automatically issue the Remote Execution command.

With "Remote Pickup", execution is dependent on software running on the server machine with the purpose of this software being to "poll" a specific directory located on the server for the appearance of scripts that need to be executed. To achieve automatic integration NatQuery can optionally FTP the scripts and supporting files onto the server, or these objects may be placed onto the server via automated file copy across a shared network.

To support Remote Pickup, commercially available software such as OPALIS (www.opalis.com) may be used or similar products, or user-written processing can be used to accomplish this but it must be noted that a NatWorks installation does not provide any such processing.

☐ **Available Disk Space**
Sufficient disk space on the server should be available to contain NatQuery-related processing files and extracted data. The amount of disk space used can be quite

substantial depending on how much data is to be extracted.

☐ **Server-Based Security**
The users of NatQuery must be authorized to access the Natural / ADABAS server platform in batch, and must be allowed to connect through FTP or otherwise be allowed to copy files into designated directories.

☐ **User-IDs**
The administrator should have available a list of all users (and their respective User-Ids,) who will be initially using NatQuery to generate extracts. The User-Ids will be the Ids used by those specific individuals (in order) to access the UNIX / Windows server.

☐ **Machine Resources & Processing Time**
NatQuery is a tool that is "dual use": It can be configured to be used as an End-User query tool, it can be configured to be used as a Data Warehouse extraction tool, or it can be configured to provide both capabilities.

In its capacity to serve as an End-User Query tool, one of NatQuery's features is the ability to determine the optimal access path (Descriptor / Super-Descriptor) to use to resolve a given extract based on user-entered data-selection criteria. In order to accomplish this, NatQuery utilizes "Descriptor Statistics", with these "Descriptor Statistics" being created as a result of executing NatQuery-generated Natural programs that capture the required information.

If NatQuery is going to be used as an End-User query tool, then processing time will be required on the Natural / ADABAS server machine so that the required "Descriptor Statistic" capture program(s) can execute. The time required to execute a given NatQuery-generated Descriptor Statistic capture program will vary form file to file, and will be dependent upon the number of records in the file and the number of Descriptors and Super Descriptors present in a given file.

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In situations where NatQuery is to be used solely for Data Warehousing, then accurate "Descriptor Statistics" become non-critical due to the fact that in most DWH situations the required data extraction programs will need to read through entire files (I.E. the Natural READ PHYSICAL I/O statement will be utilized – or an ADABAS utilities approach may alternatively be used). In this situation, having accurate Descriptor

Statistics is not required, and NatQuery provides the capability to bypass their capture.

☐ **Server Disk Files**
The naming convention in use for files on the Natural / ADABAS server should be known.

FTP Requirements

In order to achieve automated integration between NatQuery on a workstation and the remote Natural / ADABAS server using FTP, FTP connectivity must be available against the remote server and the server must run an FTP Service. Without FTP connectivity, integration can be accomplished manually or via internal file copy operations.

If FTP connectivity is intended, then the following information is required for NatQuery configuration:

☐ **Server IP Address**
The IP address or URL of the Natural / ADABAS server environment should be known.

Natural Requirements

The following are considerations and requirements for the Natural environment.

☐ **Natural Environment Values**
Various aspects of any given Natural Environment are parameterized to accommodate internationalization and operational flexibility. The following values should be known:

- **Decimal Character** _____
This would be the value of the Natural Parameter DC (Decimal Character); the NatQuery default for this is "." (Period).

- **Variable Prefix Character** _____
This is a character that is typically used to prefix "local variables" in a Natural program; the NatQuery default for this value is "#".

- **Natural Command Delimiter** _____
This would be the value of the Natural Parameter ID (Input Delimiter); the NatQuery default for this is "," (comma).

☐ **Data Definition Modules (DDMs)**
DDMs should be available on the server for the source files intended for extraction. In situations where a Trial or Proof of Concept (POC) is to be conducted, it is highly desirable that DDMs be available on the workstation environment prior to even beginning

the Trial or Proof of Concept, as this will speed the delivery of generated Natural objects required to conduct such activities.

The following considerations apply to these DDMs:

- o **Sub-Descriptors and Super-Descriptor Component Definitions**
  It is a REQUIREMENT that DDMs be generated so that the components of Sub-Descriptors and Super-Descriptors are described for each DDM that will be made available to NatQuery. To enable the generation of this component information from Predict, when a DDM is generated from Predict, the DDM should be generated so that the generation option **General Comments** is set to "Y".

- o **Occurrence Information**
  It is STRONGLY RECOMMENDED that DDMs be generated so that any documented occurrence information in Predict (if present) will be in the DDM under the Remarks column.

  If this information is not documented in Predict, or Predict is not present, then the maximum number of occurrences for each Multi-Value Field (MU) or Periodic-Group (PE) should be known.

  To enable the generation of any documented occurrence information from Predict into a DDM, when a DDM is generated from Predict the DDM should be generated so that the generation option **Line Comments** is set to "O" (the letter "O").

- o **DDMs Must Exactly Match FDTs (NatCDC requirement only)**
  When NatQuery will be used with NatCDC it is a REQUIREMENT that DDMs be generated DIRECTLY from File Definition Tables (FDTs).

- o **Negative Numeric Fields**
  DDMs that contain numeric fields that can contain negative numbers should be identified beforehand. Unless otherwise instructed, NatQuery will assume that all numeric fields will not need a preceding sign byte when these elements are extracted. The handling of Sign bytes will be further discussed in the Installation Manual.

- o **File Relationships**
  If the intent of using NatQuery is to produce multi-file extracts or extracts with automatic "File Lookups", then NatQuery will need to be provided with information on the "File Relationships" that will then support this automatic file linking (I.E. "joins"). These means that the Administrator must have available the understanding of the Descriptors or Super-Descriptors that support the "File Relationships", the cardinality of these relationships and must further know how

these Descriptors or Super-Descriptors should be initialized.

☐ **NatQuery Natural Library Name**
A Natural Library should be designated that will be used to contain all NatQuery generated programs.

☐ **Batch Natural Script Example**
In order to achieve integration between NatQuery on a workstation and a remote Natural / ADABAS server environment, NatQuery utilizes scripts that will execute in a batch environment.

To facilitate the configuration of NatQuery, a working example of a batch Natural Script that executes against the appropriate environment should be available for reference purposes.

In most cases, you have the option of sending a working Script to NatWorks prior to performing a configuration of NatQuery. NatWorks will take this Script and use it as a basis for the templates that NatQuery requires, and provide you with ready-to-execute templates that perform the basic tasks of NatQuery integration.

Natural Security
The following are considerations and requirements when the Software AG product Natural Security is utilized.

☐ **Access to designated NatQuery Natural Library**
All Administrators and Users of NatQuery should be defined through Natural Security to access the designated NatQuery Natural Library.

☐ **Administrator Access to SYSTRANS / SYSOBJH Utility**
In order to facilitate the capture of DDMs (and possibly FDTs) into NatQuery, NatQuery can utilize the SYSTRANS or the SYSOBJH utility of Natural, executed through Batch. If it is desired to use NatQuery's capability to process SYSTRANS / SYSOBJH requests, then at least one Administrator must be given access to the SYSTRANS / SYSOBJH utility.

☐ **Administrator Access to the NATLOAD (NatCDC only)**
In order to install the core NatCDC module, an administrator must have access to the NATLOAD utility of Natural, as this utility will be needed to load the NatCDC module (provided in object form).

☐ **Administrator Authorized To Have Read Access To All Desired Source Files**
In situations where NatQuery is to be used as an End-User query tool, it is strongly recommended that "Descriptor Statistic" capture programs be run that will capture the required information. In order to accomplish this, at least one NatQuery Administrator must be given Read Access to all desired sourced files.

☐ **Users Authorized To Have Read Access to Allowed Source Files**
In order to allow an End-User to retrieve data from a given ADABAS source file, each user (either individually or as a group) must be given access to the desired ADABAS source files.