

# Introduction to the Natural Server Monitor

This document describes the purpose and the structure of the Natural server monitor.



Currently, the Natural server monitor is available only for use in conjunction with the Natural Development Server which is part of Natural's Single Point of Development.

The following topics are covered:

- One Monitor for Different Server Types
- Server Monitor Facility
- System Management Client
- Monitor Communication Protocol
- Monitor Architecture

## One Monitor for Different Server Types

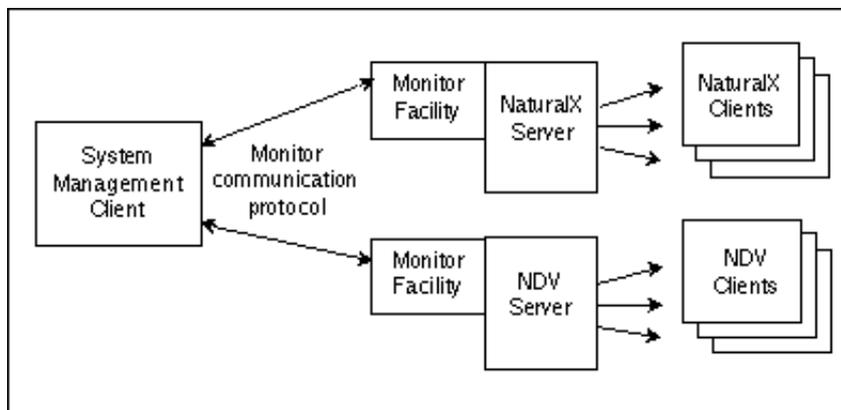
The Natural Server Monitor is intended as a common monitoring facility for the various server types that can be used in a mainframe Natural server environment:

- Natural Development Server (monitoring already implemented)
- Natural RPC Server (monitoring planned)
- NaturalX Server (monitoring planned)
- Natural for DB2 Stored Procedures Server (monitoring planned)

Each of these servers has its own individual communication protocol for the client/server communication. However, independent of the server type, there is a common requirement to observe and probably to steer such a server process.

Therefore, each server offers a universal server monitor facility. This facility follows a standard monitor communication protocol which is independent of the server type. Thus, it is possible to use one system management client to monitor different server types.

A typical scenario is shown in the diagram below.



NDV = Remote Development Server.

## Server Monitor Facility

The server monitor comprises:

- **A server implementation standard**  
Each server has to launch a subtask that listens for incoming monitor requests. It executes the request and replies the result.
- **A server directory (one per node)**  
Each server must register/unregister at the server directory at server initialization/termination. The server directory does not validate the server entries. The system management client cannot observe servers that do not register at the directory. And if a server terminates without unregistering at the server directory a stuck entry remains in the directory.
- **A client/server protocol**  
Used to transmit monitor command/reply between the system management client and the server monitor task.

The server directory access and the inter process communication is implemented by a common application programming interface NATMONI. NATMONI is a load module delivered on every server distribution tape. NATMONI must be accessible for server and system management client.

## System Management Client

The system management client is a user front-end that enables you to browse through the server directory and to communicate with particular server processes that are registered in the directory.

The system management client is available:

- as a System Management Hub Agent to use the Web Browser as a GUI front-end,
- as a command line interface (NATMOPI) that can be executed in batch, in TSO or under the OS/390 UNIX shell.

## Monitor Communication Protocol

The monitor communication protocol determines the protocol layout and defines that a server must reply for each monitor command received from the system management client.

Furthermore, each server has to implement the commands Ping and Help.

- Ping replies a server version information string.
- Help replies a brief documentation about all further commands available for that particular server type.

Additional monitor commands (referenced by the Help command) are available depending on the server type.

## Monitor Architecture

The diagram below shows the architecture of the monitoring system for any given server.

