



## IBM Tivoli Netcool/OMNibus 7.2.1

### *Configuring the ObjectServer and process agent to launch external actions*

**Tivoli.** software



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Hello. Welcome to the Netcool® Omnibus 7.2.1, *Configuring the ObjectServer and Process Agent to Launch External Actions* module.

## Objectives

Upon completion of this module, you should be able to:

- ▶ Configure the Object Server to launch external actions
- ▶ Configure the process agent to launch external actions

Upon completion of this module, you should be able to: Configure the ObjectServer to launch external actions and configure the Process Agent to launch external actions.

## Introduction

Using process control to run external procedures in automations:

- ▶ On both UNIX® and Windows®, the process control system runs external procedures that are specified in automations.
- ▶ An automation does not run programs by itself. It sends a request to a local process agent, which forwards the request to the process agent that is running on the specified host. The remote process agent then runs the requested program.
- ▶ **Restrictions for OMNibus 7.2.0:** Process agents on Windows machines can connect only to process agents on other Windows machines. Process agents on UNIX machines can connect only to process agents on other UNIX machines. Therefore, external procedures cannot pass between different operating system environments.
- ▶ **New in OMNibus 7.2.1:** External procedures can pass between different operating system environments, and process agents in one operating system can run automations sent by process agents in another operating system.

There are several things to consider when using process control to run external procedures in automations. On both UNIX and Windows, the process control system runs external procedures that are specified in automations. An automation does not run programs by itself. It sends a request to a local process agent, which forwards the request to the process agent that is running on the specified host. The remote process agent then runs the requested program. **There are Restrictions for OMNibus 7.2.0.** Process agents on Windows machines can connect only to process agents on other Windows machines. Process agents on UNIX machines can connect only to process agents on other UNIX machines. Therefore, external procedures cannot pass between different operating system environments. **New to OMNibus 7.2.1** is that External procedures can pass between different operating system environments, and process agents in one operating system can run automations sent by process agents in another operating system.

## Components

- Process control components
  - ▶ The process control system is available as an installable feature during the Tivoli Netcool/OMNIbus installation and includes many standard and configurable components.
- Process control consists of:
  - ▶ Process agents and associated configuration files
  - ▶ Processes
  - ▶ Services, in which processes are organized and run
  - ▶ Process control utilities to help you manage the process agents, processes, and services

The process control system is available as an installable feature during the Tivoli Netcool/OMNIbus installation, and includes many standard and configurable components. Process control consists of Process agents and associated configuration files, Processes, Services in which processes are organized and run and Process control utilities to help you manage the process agents, processes, and services.

## ObjectServer and PA configuration

- Elements of process automation, also known as process control, must be located on every host where process actions will occur
- The nco\_pad process daemon and the process control tools are installed through the Netcool Omnibus installation utility
- You must select the **Process Control** item from within the **Installer** application
- One thing to remember is that a red **X** next to an item in the **Installer** will remove that element from the device if it was previously installed



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## ObjectServer and PA configuration

- When installation is complete, the process automation features are installed locally. These utility features are located in the **\$OMNIHOME/bin** directory or under **Services** in a Windows system.
- You will recognize the utilities by their file names. Each begins with **nco\_pa**. The process automation daemon is **nco\_pad**.

```

root@tiny:/opt/netcool/omnibus/bin - Shell - Konsole
Session Edit View Bookmarks Settings Help

[root@tiny ~]# cd $OMNIHOME/bin
[root@tiny bin]# ls
help_end      nco_confpack      nco_keygen        nco_proxyserv
IC_end        nco_crypt          nco_message       nco_removeuser
IC_start      nco_dbinit         nco_objserv       nco_run
nco           nco_elct           nco_os_migrate    nco_sql
nco_adduser   nco_event          nco_pa_addentry   nco_sql_crypt
nco_aen       nco_g_crypt        nco_pa_crypt      nco_ssladmin
nco_aes_crypt nco_get_login_token nco_pad            nco_store_resize
nco_banner    nco_g_objserv_bi   nco_pa_shutdown   nco_xigen
nco_baroc2sql nco_g_objserv_uni  nco_pa_start      nco_xprops
nco_check_store nco_help           nco_pa_status
nco_common    nco_id             nco_pa_stop
nco_config    nco_install_ospam  nco_ping

```

When installation is complete, the process automation features are installed locally. These utility features are located in the **\$OMNIHOME/bin** directory or under **Services** in a Windows system.

You will recognize the utilities by their file names. Each begins with **nco\_pa**. The process automation daemon is **nco\_pad**.

## ObjectServer and PA configuration

Change your attention to the **\$OMNIHOME/etc** directory. You will find the main process automation configuration file **nco\_pa.conf**.

```
[root@tiny ~]# cd $OMNIHOME/etc
[root@tiny etc]# ls
admin.policy      default          gateway_dedup.sql  nco_pa.conf
application.sql   desktopserver.sql initial            nco_pa.conf.bak
automation.sql    desktop.sql      interfaces.linux2x86 NCO_PROXY.props
```

You must define your processes, services, and mapping within this file.

```
#
# List of Processes.
#
nco_process 'PrimaryObjectServer'
{
    Command '$OMNIHOME/bin/nco_objse:
    Host      = 'tiny'
    Managed   = True
}

# List of Services.
#
nco_service 'Core'
{
    ServiceType = Master
    ServiceStart = Auto
    process 'PrimaryObjectServer' NONE
}

# Routing Table Entries.
#
# 'user' - (optional) only required for secur:
# 'user' must be member of UNIX group:
# 'password' - (optional) only required for secur:
# use nco_pa_crypt to encrypt.
#
nco_routing
{
    host 'tiny' 'NCO_PA' 'omni72' 'DLENBBAJFLBKCK'
}
```

Change your attention to the **\$OMNIHOME/etc** directory. You will find the main process automation configuration file **nco\_pa.conf**. You must define your processes, services, and mapping within this file.

## ObjectServer and PA configuration

In the process section, you must define the unique process name, the command to be executed, the local authority to execute, the host on which the command will be executed against either locally or remote, any state messages, and whether the process is process control aware

```
nco_process 'PrimaryObjectServer'
{
  Command '$OMNIHOME/bin/nco_objserv -name PRIMARY -pa NCO_PA' run as 500
  Host = 'tiny'
  Managed = True
  RestartMsg = '${NAME} running as ${EUID} has been restored on ${HOST}.'
  AlertMsg = '${NAME} running as ${EUID} has died on ${HOST}.'
  RetryCount = 0
  ProcessType = PaPA_AWARE
}
```

The command would be parsed and interpreted by the native operating system

Numeric user ID of system run as 0 would be root user

In the process section you must define the unique process name, the command to be executed and the local authority to execute, the host on which the command will be executed against, any state messages, and whether the process is process control aware. The command would be parsed and interpreted by the native operating system. In other words, a Windows-based system would recognize a UNIX style command and a UNIX system would recognize a Windows-based command.



## ObjectServer and PA configuration

- In the **Services** section of the file, you must define your core services and optionally any inactive processes you want to define.
- When defining your services, be sure to specify whether any of your processes depend on another process being active first.

```
nco_service 'Core'
{
    ServiceType      =      Master
    ServiceStart     =      Auto
    process 'PrimaryObjectServer' NONE
    process 'BackupObjectServer' NONE
    process 'SimnetProbe' NONE
}

nco_service 'InactiveProcesses'
{
    ServiceType      =      Non-Master
    ServiceStart     =      Non-Auto
    process 'FailoverGate' 'BackupObjectServer'
    process 'DisplayObjectServer' NONE
    process 'DisplayGate' 'DisplayObjectServer'
    process 'NCOMSObjectServer' NONE
    process 'UniGate' 'NCOMSObjectServer'
}
```

The UniGate gateway process will not run if the NCOMSObjectServer is not running.

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When defining your services, be sure to specify whether any of your processes depend on another process being active first.

## ObjectServer and PA Configuration

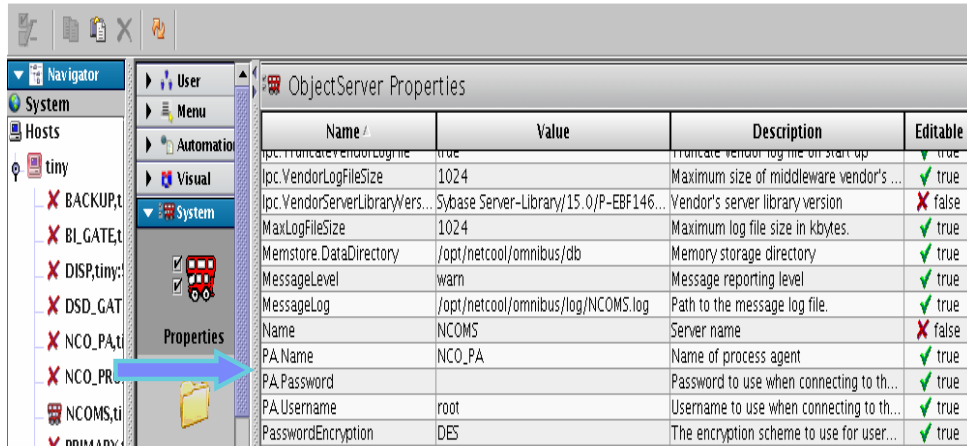
You must define the **nco\_routing** by identifying: the local and remote host names, the Process Agent running on the host, the user and encrypted password for the host if secured mode is used.

```
# Routing Table Entries.
#
# 'user'      - (optional) only required for secure mode PAD on target host
#              'user' must be member of UNIX group 'ncoadmin'
# 'password'  - (optional) only required for secure mode PAD on target host
#              use nco_pa_encrypt to encrypt.
nco_routing
{
    host 'tiny' 'NCO_PA' 'omni72' 'DLENBBAJFLBKCK'
}
```

You must define the **nco\_routing** by identifying: the local and remote host names, the Process Agent running on the host, the user and encrypted password for the host if secured mode is used.

## ObjectServer and PA configuration

Within the **nco\_config** utility, be sure to have the process control elements in the Object Servers properties.

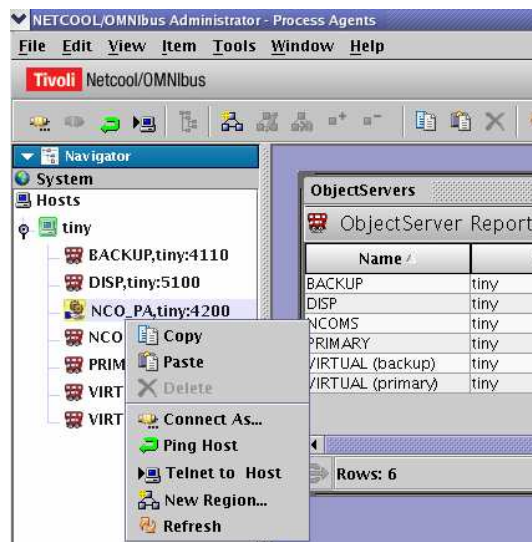


ObjectServer Properties			
Name	Value	Description	Editable
ipc.TruncateVendorLogfile	true	Truncate vendor log file on start up	✓ true
ipc.VendorLogFileSize	1024	Maximum size of middleware vendor's ...	✓ true
ipc.VendorServerLibraryVers...	Sybase Server-Library/15.0/P-EBF146...	Vendor's server library version	✗ false
MaxLogFileSize	1024	Maximum log file size in kbytes.	✓ true
Memstore.DataDirectory	/opt/netcool/omnibus/db	Memory storage directory	✓ true
MessageLevel	warn	Message reporting level	✓ true
MessageLog	/opt/netcool/omnibus/log/NCOMS.log	Path to the message log file.	✓ true
Name	NCOMS	Server name	✗ false
PA Name	NCO_PA	Name of process agent	✓ true
PA Password		Password to use when connecting to th...	✓ true
PA Username	root	Username to use when connecting to th...	✓ true
PasswordEncryption	DES	The encryption scheme to use for user...	✓ true

Within the **nco\_config** utility, be sure to have the process control elements in the Object Servers properties.

## Process automation GUI

- You can perform several process automation tasks from within the Process Automation GUI
- You can reach the PA GUI through the NCO Administration GUI interface
- Launch the administration GUI with the **nco\_config &** command
- Navigate to the **Hosts** radio button, and drill down to the **NCO\_PA** item
- Right-click and select **Connect As**
- Enter the system **root** ID and password



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You can reach the PA GUI through the NCO Administration GUI interface.

Launch the administration GUI with the **nco\_config &** command.

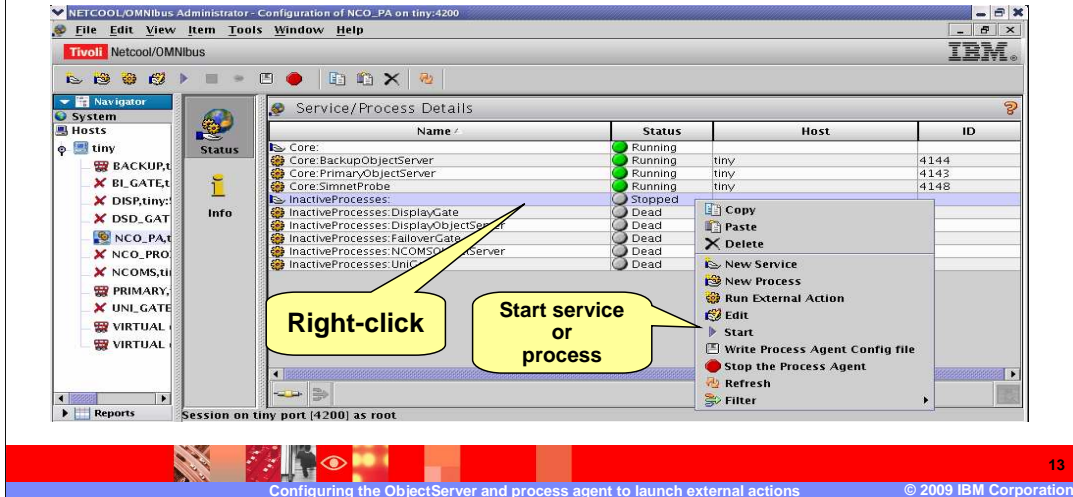
Navigate to the **Hosts** radio button, and drill down to the **NCO\_PA** item.

Right-click and select **Connect As**.

Enter the system **root** ID and password.

## Process automation GUI

- The PA GUI will open. The green circles indicate which processes are currently running.
- To start any inactive processes or services, you must right-click the item's row and select **Start**.
- All processes will be displayed if you select **Inactive Processes**. If one fails, try again to start that process. Any failures should be investigated.



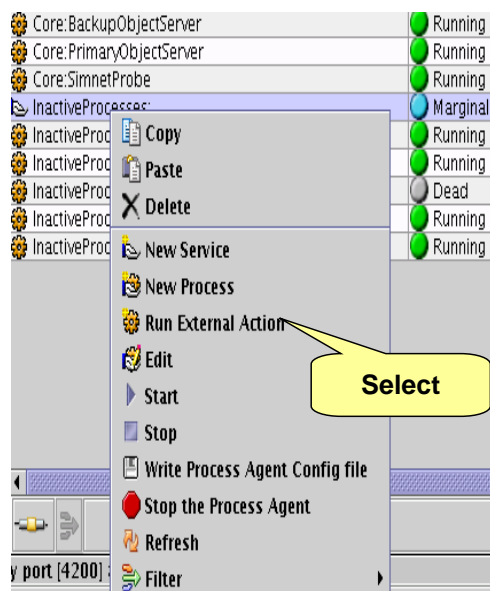
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All processes will be displayed if you select **Inactive Processes**. If one fails, try again to start that process. Any failures should be investigated.

## Process automation GUI

- You can perform additional actions with these menu items or with the main application icon in the top menu selections.
- You can add, edit, stop, or start services or processes. When adding elements, you must stop and restart the process agent. Also, you must write the new items to the configuration file before recycling.
- You can also run ad-hoc external commands against the local host or remote hosts.
- Select the **Run External Action** item from the list. An **External Actions Detail** window will open.



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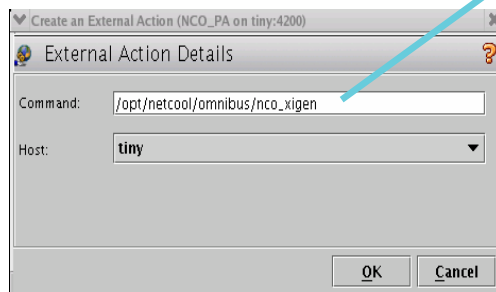
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Select the **Run External Action** item from the list. An **External Actions Detail** window will open.

## Process automation GUI

- You must enter a command and select the host. The local process agent will either pass the command to the local system or pass the command to the remote system's process agent. The remote process agent would then pass the command to the remote operating system. The external action will be completed.



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## Summary

- In summary, you have:
  - ▶ Configured the Object Server to launch external actions.
  - ▶ Configured the Process Agent to launch external actions.
- Additional information regarding process automation can be found at:

[http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp?topic=/com.ibm.netcool\\_OMNibus.doc\\_7.2.1/admin/concept/omn\\_admin\\_usingpctrmanageprocesses.html](http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp?topic=/com.ibm.netcool_OMNibus.doc_7.2.1/admin/concept/omn_admin_usingpctrmanageprocesses.html)

In summary, you have configured the Object Server to launch external actions and configured the Process Agent to launch external actions. Additional information regarding process automation can be found at the **public.boulder.ibm.com** Web site.



## Training roadmap for Tivoli *Netcool OMNIbus*

[http://www.ibm.com/software/tivoli/education/edu\\_prd.html](http://www.ibm.com/software/tivoli/education/edu_prd.html)



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