



IBM Tivoli Netcool/OMNibus 7.2.1

Configuring the ObjectServer and process agent to launch external actions

Tivoli. software



© 2009 IBM Corporation
Updated January 6, 2009

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



Elements of Process Automation also known as process control, must be 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.

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_ospan 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' 'omni172' '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.

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.

ObjectServer and PA Configuration

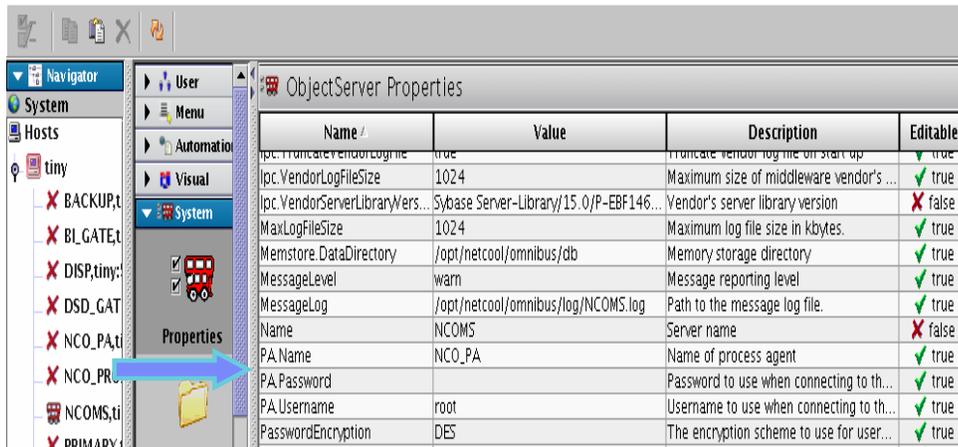
You must define the **nco_routing** by identifying: the local and remote host names, the Process Agent running on the host, the user and encrypted password for the host if secured mode is used.

```
# 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.

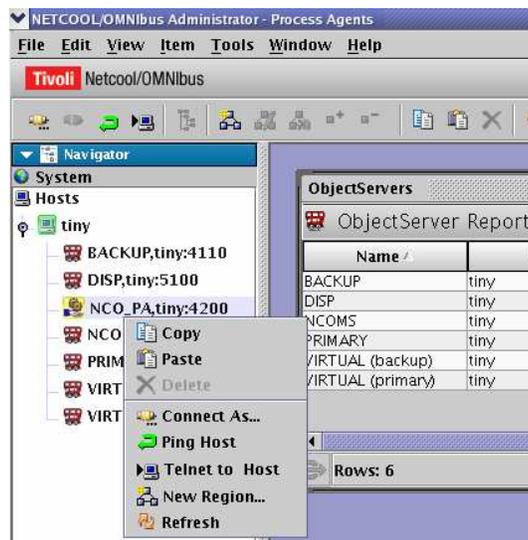


Name	Value	Description	Editable
ipc.TruncateVendorLogfile	true	Truncate vendor log file on start up	✓ true
ipc.VendorLogFileSize	1024	Maximum size of middleware vendor's ...	✓ true
ipc.VendorServerLibraryVers...	Sybase Server-Library/15.0/P-EBF146...	Vendor's server library version	✗ false
MaxLogFileSize	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



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.

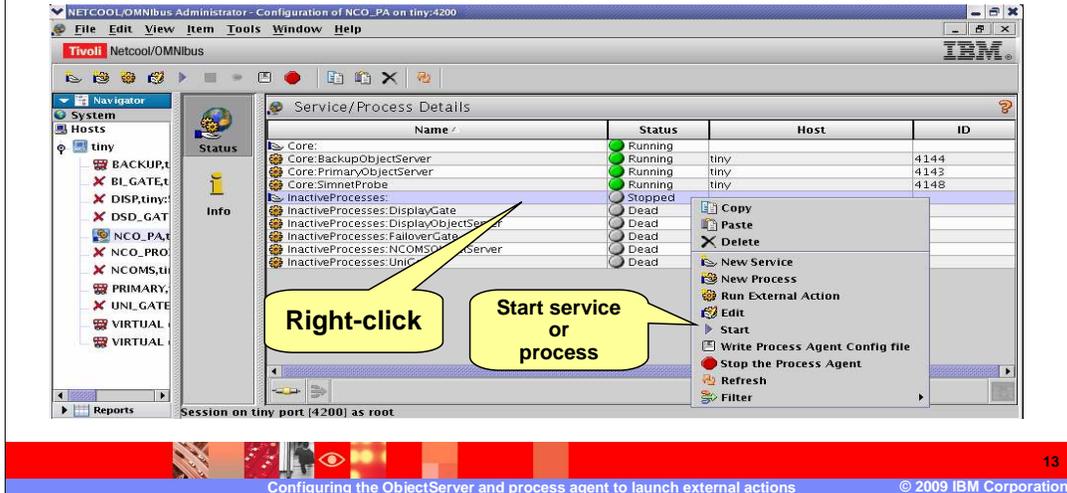
Navigate to the **Hosts** radio button, and drill down to the **NCO_PA** item.

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

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

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.



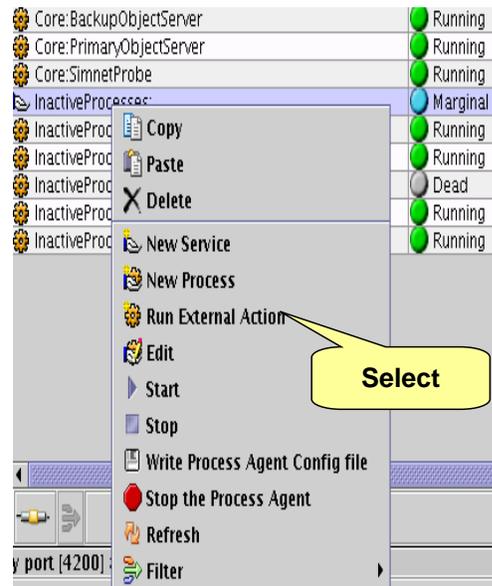
The PA GUI will open. The green circles indicate which processes are currently running.

To start any inactive processes or services, you must right-click on 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.

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.



You can perform additional actions with these menu items or with the main application icon in the top menu selections.

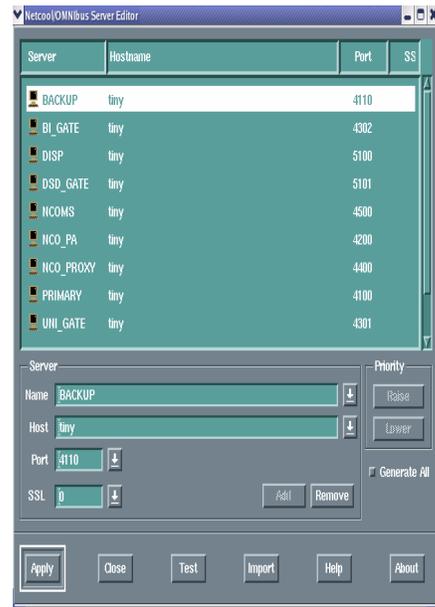
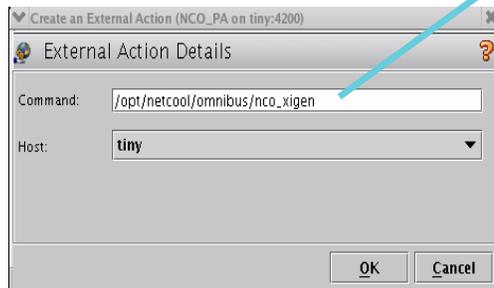
You can add, edit, stop, or start services or processes. When adding elements, you must stop and restart the process agent. Also, you must write the new items to the configuration file before recycling.

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.

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.



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.

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

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



To obtain training information follow this link.

http://www.ibm.com/software/tivoli/education/edu_prd.html

Feedback

Your feedback is valuable

You can help improve the quality of IBM Education Assistant content to better meet your needs by providing feedback.

- Did you find this module useful?
- Did it help you solve a problem or answer a question?
- Do you have suggestions for improvements?

Click to send e-mail feedback:

mailto:iea@us.ibm.com?subject=Feedback_about_pa.ppt

This module is also available in PDF format at: [../pa.pdf](#)



You can help improve the quality of IBM Education Assistant content by providing feedback.

Trademarks, copyrights, and disclaimers

IBM, the IBM logo, ibm.com, and the following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:

Netcool Tivoli

If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of other IBM trademarks is available on the Web at "Copyright and trademark information" at <http://www.ibm.com/legal/copytrade.shtml>

Windows, and the Windows logo are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.

Product data has been reviewed for accuracy as of the date of initial publication. Product data is subject to change without notice. This document could include technical inaccuracies or typographical errors. IBM may make improvements or changes in the products or programs described herein at any time without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business. Any reference to an IBM Program Product in this document is not intended to state or imply that only that program product may be used. Any functionally equivalent program, that does not infringe IBM's intellectual property rights, may be used instead.

THE INFORMATION PROVIDED IN THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IBM EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IBM shall have no responsibility to update this information. IBM products are warranted, if at all, according to the terms and conditions of the agreements (for example, IBM Customer Agreement, Statement of Limited Warranty, International Program License Agreement, etc.) under which they are provided. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products.

IBM makes no representations or warranties, express or implied, regarding non-IBM products and services.

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents or copyrights. Inquiries regarding patent or copyright licenses should be made, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

© Copyright International Business Machines Corporation 2009. All rights reserved.

Note to U.S. Government Users - Documentation related to restricted rights-Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract and IBM Corp.

