IBM® Tivoli® Netcool/OMNIbus Syslogd Probe 5.0

Reference Guide July 15, 2011



Note

Before using this information and the product it supports, read the information in <u>Appendix A</u>, "Notices and Trademarks," on page 11.

Edition notice

This edition applies to version 5.0 of IBM Tivoli Netcool/OMNIbus Syslogd Probe (SC23-7930-02) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC23-7930-01.

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About this guide

The following sections contain important information about using this guide.

Document control page

Use this information to track changes between versions of this guide.

The IBM Tivoli Netcool/OMNIbus Syslogd Probe documentation is provided in softcopy format only. To obtain the most recent version, visit the IBM Tivoli Netcool Knowledge Center:

http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp?topic=/com.ibm.tivoli.namomnibus.doc/ welcome_ptsm.htm

Table 1. Document modification history			
Document version	Publication date	Comments	
SC23-7930-01	July 25, 2008	First IBM publication. Support for Linux [®] on zSeries added.	
SC23-7930-02	July 15, 2011	Information about operating system conventions added in <u>"Conventions used in this guide"</u> <u>on page v</u> . Package version information updated in <u>"Summary" on page</u> <u>1</u> . Installation section replaced by <u>"Installing probes" on page 2</u> . <u>"Configuring the probe" on page</u> <u>3</u> added.	

Conventions used in this guide

All probe guides use standard conventions for operating system-dependent environment variables and directory paths.

Operating system-dependent variables and paths

All probe guides use standard conventions for specifying environment variables and describing directory paths, depending on what operating systems the probe is supported on.

For probes supported on UNIX and Linux operating systems, probe guides use the standard UNIX conventions such as *\$variable* for environment variables and forward slashes (/) in directory paths. For example:

\$OMNIHOME/probes

For probes supported only on Windows operating systems, probe guides use the standard Windows conventions such as **%***variable***%** for environment variables and backward slashes (\) in directory paths. For example:

%OMNIHOME%\probes

For probes supported on UNIX, Linux, and Windows operating systems, probe guides use the standard UNIX conventions for specifying environment variables and describing directory paths. When using the Windows command line with these probes, replace the UNIX conventions used in the guide with Windows conventions. If you are using the bash shell on a Windows system, you can use the UNIX conventions.

Note : The names of environment variables are not always the same in Windows and UNIX environments. For example, %TEMP% in Windows environments is equivalent to \$TMPDIR in UNIX and Linux environments. Where such variables are described in the guide, both the UNIX and Windows conventions will be used.

Operating system-specific directory names

Where Tivoli Netcool/OMNIbus files are identified as located within an *arch* directory under NCHOME or OMNIHOME, *arch* is a variable that represents your operating system directory. For example:

\$OMNIHOME/probes/arch

The following table lists the directory names used for each operating system.

Note : This probe may not support all of the operating systems specified in the table.

Table 2. Directory names for the arch variable		
Operating system	Directory name represented by <i>arch</i>	
AIX [®] systems	aix5	
Red Hat Linux and SUSE systems	linux2x86	
Linux for System z	linux2s390	
Solaris systems	solaris2	
Windows systems	win32	

OMNIHOME location

Probes and older versions of Tivoli Netcool/OMNIbus use the OMNIHOME environment variable in many configuration files. Set the value of OMNIHOME as follows:

- On UNIX and Linux, set \$OMNIHOME to \$NCHOME/omnibus.
- On Windows, set %OMNIHOME% to %NCHOME%\omnibus.

Chapter 1. Syslogd Probe

The Syslogd Probe acts as a server on the syslog port of a host machine. It monitors data from various devices sent to a specified UDP port on the machine.

There are two probes that acquire data from syslogd: Syslog Probe and Syslogd Probe. Both probes parse the syslog messages in the same way, they differ in how they acquire data. The Syslog Probe acquires syslogd data from the system log file or from a named pipe, for details see the Netcool/OMNIbus Syslog Probe Guide. The Syslogd Probe acquires syslogd data directly from a UDP port.

If you have a syslog daemon running on the probe machine, consider using the Syslog Probe. The Syslogd Probe is effectively a syslog daemon in its own right and is intended for use where it is undesirable or difficult to install a syslog daemon.

Note : On HP-UX and HP-UX Integrity, syslogd does not support logging to a named pipe.

This guide contains the following sections:

- <u>"Summary" on page 1</u>
- "Installation consideration" on page 2
- "Installing probes" on page 2
- "Configuring the probe" on page 3
- "Data acquisition" on page 3
- "Properties and command line options" on page 6
- "Elements" on page 8
- "Error messages" on page 9
- "ProbeWatch messages" on page 10

Summary

Each probe works in a different way to acquire event data from its source, and therefore has specific features, default values, and changeable properties. Use this summary information to learn about this probe.

The following table summarizes the probe.

Table 3. Summary			
Probe target	Syslog Data		
Probe executable name	nco_p_syslogd (on UNIX and Linux operating systems) nco_p_syslogd.exe (on Windows operating systems)		
Package version	5.0		
Probe supported on	For details of supported operating systems, see the following Release Notice on the IBM Software Support Website: <u>https://www-304.ibm.com/support/docview.wss?</u> <u>uid=swg21502962</u>		
Properties file	<pre>\$0MNIHOME/probes/arch/syslogd.props</pre>		
Rules file	\$OMNIHOME/probes/arch/syslogd.rules		

Table 3. Summary (continued)			
Requirements	A currently supported version of IBM Tivoli Netcool/OMNIbus.		
Connection method	UDP Connection		
Remote connectivity	Events can be sent to this probe from a remote host.		
Peer-to-peer failover functionality	Available		
Multicultural support	Available		
IP environment	IPv4 and IPv6 For communications between the probe and IBM® Tivoli® Netcool/OMNIbus, the IPv6 environment is supported on all operating systems. For communication between the probe and the target device, IPv6 is supported on all supported operating systems except Microsoft Windows.		
Federal Information Processing Standards (FIPS)	IBM Tivoli Netcool/OMNIbus uses the FIPS 140-2 approved cryptographic provider: IBM Crypto for C (ICC) certificate 384 for cryptography. This certificate is listed on the NIST website at http://csrc.nist.gov/groups/STM/cmvp/documents/ 140-1/1401val2004.htm. For details about configuring Netcool/ OMNIbus for FIPS 140-2 mode, see the <i>IBM Tivoli Netcool/</i> <i>OMNIbus Installation and Deployment Guide</i> .		

Installation consideration

If the **Network Accelerator Cache** is running on the system during probe installation, the installation will fail. To avoid this problem, disable the **Network Accelerator Cache** option before installing the probe.

Installing probes

All probes are installed in a similar way. The process involves downloading the appropriate installation package for your operating system, installing the appropriate files for the version of Netcool/OMNIbus that you are running, and configuring the probe to suit your environment.

The installation process consists of the following steps:

1. Downloading the installation package for the probe from the Passport Advantage Online website.

Each probe has a single installation package for each operating system supported. For details about how to locate and download the installation package for your operating system, visit the following page on the IBM Tivoli Knowledge Center:

http://www-01.ibm.com/support/knowledgecenter/SSSHTQ/omnibus/probes/all_probes/wip/ reference/install_download_intro.html

2. Installing the probe using the installation package.

The installation package contains the appropriate files for all supported versions of Netcool/OMNIbus. For details about how to install the probe to run with your version of Netcool/OMNIbus, visit the following page on the IBM Tivoli Knowledge Center:

http://www-01.ibm.com/support/knowledgecenter/SSSHTQ/omnibus/probes/all_probes/wip/ reference/install_install_intro.html 3. Configuring the probe.

This guide contains details of the essential configuration required to run this probe. It combines topics that are common to all probes and topics that are peculiar to this probe. For details about additional configuration that is common to all probes, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*.

Configuring the probe

After installing the probe, you need to make various configuration settings to suit your environment.

To send all messages to either a log file or a named pipe (a FIFO), you must modify the /etc/ syslog.conf file. By default, the probe will attempt to read a message from a log file called /var/log/ ncolog. To set syslog to write to this file, add the following line to the /etc/syslog.conf file:

*.debug /var/adm/ncolog

To forward syslog messages to a remote syslog logger, you must prepend the server name with an at symbol (@); for example:

*.debug @logserver

The @ symbol denotes that messages must be forwarded to a remote host, the name of which must be defined in the /etc/hosts file. The Syslogd Probe listens on port 514 for Syslog messages that are forwarded from other machines. The machine must to be configured as above to send events to probe.

Note : The line that you add to specify the logger must not be the first line of the /etc/syslog.conf file. If it is, it will activate a bug in syslog, where it attempts a check on the first file in the first entry in the /etc/syslog.conf file, and this will make the syslogd system unstable. Also note that some implementations of syslogd are limited to 20 valid entries in the /etc/syslog.conf file.

The line specified will write all syslogd messages to the file. It is also possible to configure syslogd to only write particular messages to the file. Refer to the UNIX online manual pages for syslogd.conf for more details. If you wish to configure the probe to read from a named pipe instead of a log file, it will be necessary to create this named pipe before starting the probe. To do this, you must to issue a mknod command at the UNIX prompt. For example, if you wish the named pipe used by syslogd and the Syslogd Probe to be /var/adm/nco you must run the following command:

mknod /var/adm/nco p

Refer to the UNIX online manual pages for mknod for further details.

Data acquisition

Each probe uses a different method to acquire data. Which method the probe uses depends on the target system from which it receives data.

The Syslogd Probe receives events on the UDP port of a local machine; by default, this is port 514. The probe acts as a listening server on this host machine. When events are received on the UDP port, the probe parses the event data and breaks it at every space character. The probe then tokenizes the data using the rules file and sends tokens to the ObjectServer.

Data acquisition is described in the following topics:

- "Rules file timeout" on page 4
- "Internationalization support" on page 4
- "Peer-to-peer failover functionality" on page 5
- "Data stream capture" on page 6
- "IP address resolution" on page 6

Rules file timeout

The probe can periodically check whether the rules file has been modified. If the rules file has been modified, the probe re-reads the rules file.

To specify the frequency with which the probe checks whether the rules file has been modified, use the **ReadRulesFileTimeout** property.

Internationalization support

The probe supports multibyte character sets (for example, Japanese) and character sets that contain individual multibyte characters (for example German, French, and Spanish). To view the character sets correctly, you must configure the locale settings on the host machine correctly.

If you are using a language that contains multibyte characters, you must set the LANG environment variables to the name of your character set, and export the LC_ALL environment variable. For example, if you are using Japanese, set these environment variables to ja_JP.UTF-8; if you are using German, set these environment variables to de_DE.UTF-8. This will enable the probe to recognise the multibyte characters used by your character set when they occur in any network events.

Table 4. Supported language locales				
Languages	AIX	HP-UX	Solaris	Linux
English (US)	en_US	en_US	en_US	en_US
Simplified Chinese	zh_CN	zh_CN	zh_CN	zh_CN
Traditional Chinese	zh_TW	zh_TW.eucTW	Zh_TW.big5	zh_TW.big5
Czech	cs_CZ	cs_CZ	CS	cs_CZ
French (standard)	fr_FR	fr_FR	fr	fr_FR
German (standard)	de_DE	de_DE	de	de_DE
Hungarian	hu_HU	hu_HU	hu	hu_HU
Italian (standard)	it_IT	it_IT	it	it_IT
Japanese	ja_JP	ja_JP	ja	ja_JP
Korean	ko_KR	ko_KR	ko	ko_KR
Polish	pl_PL	pl_PL	pl	pl_PL
Portuguese (Brazilian)	pt_BR	pt_BR	pt	pt_BR
Russian	ru_RU	ru_RU	ru	ru_RU
Spanish	es_ES	es_ES	es	es_ES

The probe supports the following language locales:

Example multi-byte character set on Solaris

The following steps describe how to configure Solaris to use the Japanese character set:

- 1. Install the necessary components for Japanese on to the host machine using the Solaris CD.
- 2. Set the LANG and LC_ALL environment variables to ja_JP PCK. This uses SJIS encoding.

Note : You may have to set the LANG in the host machine's default settings file and reboot it to make the changes take effect.

3. Make sure that the file \$OMNIHOME/platform/arch/locales/locales.dat has the following entry:

locale = ja_JP PCK, japanese, sjis

Where ja_JP PCK is the vendor locale, japanese is the Sybase language, and sjis is the Sybase character set.

Example multi-byte configuration on Windows

The following steps describe how to configure Windows to use the Japanese character set:

1. Install the necessary language pack using the Control Panel.

Note : You must reboot the machine to make the character set available.

2. Make sure the file %OMNIHOME%\locales\locales.dat, has the following element:

locale = jpn, japanese, sjis

Where jpn is the vendor locale, japanese is the Sybase language, and sjis is the Sybase character set

Note : You must reboot the machine to be able to use the probe as a service in the required locale.

Peer-to-peer failover functionality

The probe supports failover configurations where two probes run simultaneously. One probe acts as the master probe, sending events to the ObjectServer; the other acts as the slave probe on standby. If the master probe fails, the slave probe activates.

While the slave probe receives heartbeats from the master probe, it does not forward events to the ObjectServer. If the master probe shuts down, the slave probe stops receiving heartbeats from the master and any events it receives thereafter are forwarded to the ObjectServer on behalf of the master probe. When the master probe is running again, the slave probe continues to receive events, but no longer sends them to the ObjectServer.

Example property file settings for peer-to-peer failover

You set the peer-to-peer failover mode in the properties files of the master and slave probes. The settings differ for a master probe and slave probe.

Note : In the examples, make sure to use the full path for the property value. In other words replace \$OMNIHOME with the full path. For example: /opt/IBM/tivoli/netcool.

The following example shows the peer-to-peer settings from the properties file of a master probe:

Server	:	"NCOMS"
RulesFile	:	"master_rules_file"
MessageLog	:	"master_log_file"
PeerHost	:	"slave_hostname"
PeerPort	:	6789 # [communication port between master and slave probe]
Mode	:	"master"
PidFile	:	"master_pid_file"

The following example shows the peer-to-peer settings from the properties file of the corresponding slave probe:

Server	:	"NCOMS"
RulesFile	:	"slave_rules_file"
MessageLog	:	"slave_log_file"
PeerHost	:	"master_hostname"
PeerPort	:	6789 # [communication port between master and slave probe]
Mode	:	"slave"
PidFile	:	"slave_pid_file"

Data stream capture

The probe can capture the data stream sent from a device. This data is stored in a log file and can be used for debugging, to develop new features for the probe, or to pass to other management systems that require the same data. To enable stream capture, set the **DateStreamCapture** property to 1. Then specify the name of the stream capture file by setting the **StreamCaptureFile** property or - streamcapturefile command line option.

Note : The data stream capture function generates a lot of data. When you no longer require data for debugging, remove the file name specified by the **StreamCaptureFile** property in the properties file.

IP address resolution

If you are using a naming service, such as Domain Name System (DNS) or Network Information Service (NIS), the IP address of each host can be written in either dotted quad format (for example 193.131.98.3) or can be assigned with a human-readable host name.

By default, the probe resolves all dotted quad IP addresses before sending events to the ObjectServer. If you set the **NoNameResolution** property to 1, the probe sends events to the ObjectServer without resolving the host name first. This option can improve the performance of the probe.

Properties and command line options

You use properties to specify how the probe interacts with the device. You can override the default values by using the properties file or the command line options.

The following table describes the properties and command line options specific to this probe. For more information about generic Netcool/OMNIbus properties and command line options, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*.

Table 5. Properties and command line options			
Property name	Command line option	Description	
BreakCharacters string	-break string	Use this property to list characters that are used in the FIFO to separate non-quoted tokens. The default is ,=.	

Table 5. Properties and command line options (continued)			
Property name	Command line option	Description	
NoNameResolution integer	-nonameresolution (equivalent to NoNameResolution with a value of 0)	Use this property to specify whether or not the probe performs name resolution on IP addresses. This property can take the following values:	
	-nameresolution	0: The probe performs name resolution.	
	NoNameResolution with a value of 1)	1: The probe does not perform name resolution.	
	,	The default is 0.	
OffsetOne integer	-offset1 integer	Use this property to specify the number of token elements to create.	
		The default is 20.	
OffsetTwo integer	-offset2 integer	Use this property to specify the position (count of tokens) within the syslogd message at which the details section begins.	
		The default is 6.	
OffsetZero integer	-offset0 integer	Use this property to specify the character position from where the probe should parse the event data.	
		The default is 0.	
QuoteCharacters string	-quote string	Use this property to specify the characters that the probe treats as quote marks. Anything contained within matching quote characters is treated as a single token. The default is \ ' \".	
ReadRulesFileTimeout <i>integer</i>	-readrulesfiletimeout integer	Use this property to specify the period (in minutes) in which the probe checks whether the rules file has been modified. If the rules file has been modified, the probe re-reads the rules file. The default is 10.	
StreamCaptureFile string	-streamcapturefile string	Use this property to specify the file the probe uses to store the input data stream.	
		Tip : Leaving this property blank disables the stream capture function. When you no longer require data for debugging, you should disable the stream capture function.	

Table 5. Properties and command line options (continued)			
Property name	Command line option	Description	
QuoteCharacters string	-quote <i>string</i>	Use this property to specify the characters that the probe treats as quote marks. Anything contained within matching quote characters is treated as a single token. The default is \'\".	
TimeFormat string	-timeformat string	Use this property to specify the timestamp conversion format (refer to the UNIX online manual page for strptime). The default is %b %d %T.	
UDPPort integer	-udpport integer	Use this property to specify the UDP port on which the probe listens. The default is 514.	
WhiteSpaces string	-white <i>string</i>	Use this property to specify the characters that the probe treats as whitespace that separate tokens. The default is \t.	

Elements

The probe breaks event data down into tokens and parses them into elements. Elements are used to assign values to ObjectServer fields; the field values contain the event details in a form that the ObjectServer understands.

The following table describes the elements that the probe generates. Not all the elements described are generated for each event; the elements that the probe generates depend on the event type.

Table 6. Elements		
Element name	Element description	
\$ArrivalTime	This element indicates when the alarm was received.	
\$EventCount	This element identifies the sequence number of the event.	
\$Facility	This element indicates the facility effected by the event.	
\$Priority	This element indicates the priority of the event.	
\$Raw	This element contains the unaltered line as read by the probe.	
\$RemoteHostInfo	This element contains the information for the remote host.	
\$Severity	This element indicates the severity of the event.	
\$Time	This element displays the timestamp of the syslogd message, as specified in UNIX integer format.	

Table 6. Elements (continued)			
Element name	Element description		
\$Token <i>nn</i>	This element contains the tokens generated from syslogd message, as specified by properties OffsetZero and OffsetOne .		
\$TokenCount	This element contains the number of tokens created.		

Error messages

Error messages provide information about problems that occur while running the probe. You can use the information that they contain to resolve such problems.

The following table describes the error messages specific to this probe. For information about generic Netcool/OMNIbus error messages, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*.

Table 7. Error messages				
Error	Description	Action		
Date stamp not in recognised format	The date stamp is not in the format specified by the TimeFormat property.	Adjust the TimeFormat property appropriately.		
		Note : The probe will not recognize the time format if the locale is not set to English.		
Failed to allocate memory for event	The probe failed to allocate internal storage.	Make more memory available.		
Failed to allocate memory for incoming message				
Failed to copy address of sending host				
Failed to copy current time				
Failed to create UDP socket on port port_nunber	There are insufficient system resources to run the probe.	Close applications and a make more system resources available.		
Failed to get message from queue	The probe was unable to get a message from the UPD port.	Check that the host you are connecting to is running correctly. Check that UDP port is specified correctly in the probe properties file.		
Failed to process line	The probe was unable to process a line of the alarm against the rules file.	Contact IBM Software Support.		

Table 7. Error messages (continued)				
Error	Description	Action		
Failed to read rules file	The rules file for the probe is not available or incorrectly specified.	Check the properties file and/or command line and ensure the rules file is in the expected located location.		
Failed to stat rules file : reason	The probe cannot obtain the status of the file specified.	Check that the file exists and that the permissions are set correctly.		
Failed to translate date stamp into UTC	An alert was received that did not match the date stamp format expected.	Compare the format of the timestamp in the syslog message with that specified by the TimeFormat property in the properties file.		
Failed to understand message. Not in RFC3164 format?	The syslog message received was not in RFC format.	Make sure that the UDP port sends messages in RFC3164 format.		
Unable to open file : filename : reason	The probe could not open the file specified.	Check that the permissions are set correctly on the file specified.		
Unable to resolve host name, using IP address	The probe was unable to resolve the name of the host from the IP address specified.	Check that the host name appears in your DNS lookup table.		

ProbeWatch messages

During normal operations, the probe generates ProbeWatch messages and sends them to the ObjectServer. These messages tell the ObjectServer how the probe is running.

The following table describes the ProbeWatch messages that the probe generates. For information about generic Netcool/OMNIbus ProbeWatch messages, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*.

Table 8. ProbeWatch messages				
ProbeWatch message	Description	Triggers or causes		
Going Down	The probe is shutting down.	The probe is shutting down after performing the shutdown routine.		
Running	The probe is running normally.	The probe has just been started.		
Unable to get events	A problem occurred while trying to obtain the syslogd log entries.	There was a connection failure, or a valid connection was not established.		
Unable to open file file name	The probe could not open the data stream capture file.	The permissions are not set correctly on the data stream capture file.		

Appendix A. Notices and Trademarks

This appendix contains the following sections:

- Notices
- Trademarks

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