**DB2 MONITORING INSTALLATION**

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# **PREPARATION ON DB2 HOST**

## Create database user:

[root]# groupadd nagios

[root]# useradd -g nagios -s /bin/false nagios

[root]# passwd nagios

## Grant sysmon authority:

db2inst1$ db2 update dbm cfg using sysmon\_group nagios

db2inst1$ db2 grant select,update on table SYSTOOLS.STMG\_DBSIZE\_INFO to nagios

## Switch on the performance counters:

db2inst1$ db2 update dbm cfg using dft\_mon\_bufpool on

db2inst1$ db2 update dbm cfg using dft\_mon\_lock on

db2inst1$ db2 update dbm cfg using dft\_mon\_timestamp on

# **PREPARATION ON NAGIOS SERVER**

## Install Perl-DBI & perl-ExtUtils-MakeMaker

yum -y install perl-DBI perl-devel nss-softokn nss-softokn-freebl gcc

## Install IBM Data Server Runtime Client

\* Download IBM Data Server Runtime Client from IBM website

cd *<downloaded\_ibm\_data\_server\_runtime\_client\_file\_location>*

yum -y install libstdc++ libstdc++-devel

tar zxvf v11.5.4\_linuxx64\_rtcl.tar.gz

cd rtcl

./db2\_install

* type ‘yes’ and press ‘Enter’ to accept install
* type ‘yes’ to accept default installation directory

export DB2\_HOME=/opt/ibm/db2/V11.5

export LD\_LIBRARY\_PATH=/opt/ibm/db2/V11.5/lib64

groupadd db2grp1

groupadd db2fgrp1

groupadd dasadm1

useradd -g db2grp1 db2inst1

useradd -g db2fgrp1 db2fenc1

useradd -g dasadm1 dasusr1

passwd db2inst1

passwd db2fenc1

passwd dasusr1

/opt/ibm/db2/V11.5/instance/db2icrt db2inst1

cp /home/db2inst1/sqllib/db2profile /etc/profile.d/db2profile.sh

Logout and Login back again to load environment settings

\* there is one more step: adding the catalog entry to for the remote database which consists of two steps:

|  |
| --- |
| **Make sure you have all the inputs you need!**  **REMOTE**: Short host name with proper entry in hosts file OR Fully qualified host name OR IP address (that is the order of preference if you have all)  **PORT**: Port number the db2 server is listening on. To get this, log into db2 server as the db2 instance owner (frequently db2inst1), and do: $ db2 get dbm cfg |grep SVCENAME TCP/IP Service name                          (SVCENAME) = db2c\_db2inst1  $ cat /etc/services |grep db2c\_db2inst1 db2c\_db2inst1   50001/tcp  **NODENAME**: This is a name that you make up.  You might want to develop a standard for your company and stick to it.  **DATABASENAME**: The name of the database.  **Syntax (run as db2inst1 user):**  db2 catalog tcpip node *<NODENAME>* remote *<REMOTE>* server *<PORT>*  db2 terminate  db2 catalog database *<DATABASENAME>* at node *<NODENAME>*  db2 terminate  **Test Connection:**  db2 connect to *<database\_name>* user *<user\_name>*   ← *(you will then be prompted for a password)* |

**Copy over ‘**/home/db2inst1/sqllib**’ directory into ‘**/opt/ibm/db2/V11.5**’ directory**

cd /opt/ibm/db2/V11.5

cp -rp /home/db2inst1/sqllib .

chown -R bin.bin sqllib

## Install IBM Data Server Driver

\* Download IBM Data Server Driver from IBM website

cd /usr/local/lib64

--> *<downloaded\_ibm\_data\_server\_driver\_file\_location>*

yum -y install ksh

tar zxvf v11.5.4\_linuxx64\_dsdriver.tar.gz

cd dsdriver

./installDSDriver

chown -v -R root:root \*

echo "/opt/ibm/db2/V11.5/lib64/" >> /etc/ld.so.conf.d/db2-x86\_64.conf

ldconfig –v

ldconfig -p | grep -i db2 *<-- just to check and confirm*

cp -rp include /opt/ibm/db2/V11.5/

chown bin.bin /opt/ibm/db2/V11.5/include

cp -rp include /home/db2inst1/sqllib/

chown bin.bin /home/db2inst1/sqllib/

|  |
| --- |
| So I tried to recreate the problem, and was successful to find the same problem. What you need to add to your configurations is a global dynamic library config entry. I first installed the dsdriver into my /root/ directory, but later unpacked the dsdriver into /usr/local/lib64:  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  cd /usr/local/lib64 tar -xvzf ibm\_data\_server\_driver\_package\_linuxx64\_v10.5.tar.gz  Run the installer: (the script requires ksh - you might need to do a **yum install ksh**  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  cd /usr/local/lib64/dsdriver ./installDSDriver  Clean up the ownership of the installed files to assign them to root:  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  cd /usr/local/lib64/dsdriver chown -v -R root:root \*  Create an entry for the /etc/ld.so.conf.d/  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  echo "/usr/local/lib64/dsdriver/lib" >> /etc/ld.so.conf.d/db2-x86\_64.conf  Then update ldconfig  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  ldconfig -v  to verify:  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  ldconfig -p | grep -i db2  and you should get:  **CODE:**[**SELECT ALL**](https://support.nagios.com/forum/viewtopic.php?f=16&t=30457&start=10)  [root@nagiosxi ~]# ldconfig -p | grep -i db2    libdb2o.so.1 (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libdb2o.so.1    libdb2o.so (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libdb2o.so    libdb2clixml4c.so.1 (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libdb2clixml4c.so.1    libdb2clixml4c.so (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libdb2clixml4c.so    libdb2.so.1 (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libdb2.so.1    libdb2.so (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libdb2.so    libDB2xml4c.so.58 (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libDB2xml4c.so.58    libDB2xml4c.so (libc6,x86-64) => /usr/local/lib64/dsdriver/lib/libDB2xml4c.so  I did not need to recompile the cpan module DBD::DB2., nor did I need to restart Apache. I did the force immediate check and it came back without the library error. I still got an connection error, but we don't have a DB2 database install in-house. |

## Install Perl DBD::DB2

wget <https://cpan.metacpan.org/authors/id/I/IB/IBMTORDB2/DBD-DB2-1.85.tar.gz>

tar zxvf DBD-DB2-1.85.tar.gz  
cd DBD-DB2-1.85

Don’t have to do this, unless necessary:

|  |
| --- |
| export DB2\_HOME=/opt/ibm/db2/V11.5/sqllib  export DB2LIB=$DB2\_HOME/lib64  export LD\_LIBRARY\_PATH=$DB2LIB:$LD\_LIBRARY\_PATH |

vi Makefile

Change

|  |
| --- |
| CCFLAGS = -D\_REENTRANT -D\_GNU\_SOURCE -O2 -g -pipe -Wall -W-error=format-security -Wp,-D\_FORTIFY\_SOURCE=2 -Wp,-D\_GLIBCXX\_ASSERTIONS -fexceptions -fstack-protector-strong -grecord-gcc-switches -specs=/usr/lib/rpm/redhat/redhat-hardened-cc1 -specs=/usr/lib/rpm/redhat/redhat-annobin-cc1 -m64 -mtune=generic -fasynchronous-unwind-tables -fstack-clash-protection -fcf-protection -fwrapv -fno-strict-aliasing -I/usr/local/include -D\_LARGEFILE\_SOURCE -D\_FILE\_OFFSET\_BITS=64 |

To

|  |
| --- |
| CCFLAGS = -D\_REENTRANT -D\_GNU\_SOURCE -O2 -g -pipe -Wall -Wno-error=format-security -Wp,-D\_FORTIFY\_SOURCE=2 -Wp,-D\_GLIBCXX\_ASSERTIONS -fexceptions -fstack-protector-strong -grecord-gcc-switches -specs=/usr/lib/rpm/redhat/redhat-hardened-cc1 -specs=/usr/lib/rpm/redhat/redhat-annobin-cc1 -m64 -mtune=generic -fasynchronous-unwind-tables -fstack-clash-protection -fcf-protection -fwrapv -fno-strict-aliasing -I/usr/local/include -D\_LARGEFILE\_SOURCE -D\_FILE\_OFFSET\_BITS=64 |

perl Makefile.PL  
make  
make test  
make install

chmod -R go+rX /usr/local/lib64/perl5

Check the installation:  
perl -e 'use DBD::DB2;'  
perl -e 'use DBI;'

## Install check\_db2\_health plugin

\* Get the latest version of plugin from <https://labs.consol.de/nagios/check_db2_health/index.html>

cd *<downloaded\_check\_db2\_health\_plugin\_file\_location>*

tar zxvf check\_db2\_health-1.1.2.2.tar.gz

cd check\_db2\_health-1.1.2.2

./configure

make

make test

make install

Sample commands:

/usr/local/nagios/libexec/check\_db2\_health –hostname KHOPUDB2 –port 50000 --username=db2inst1 --password=P@ssw0rd --mode=connection-time --database=SAMPLE

/usr/local/nagios/libexec/check\_db2\_health --hostname KHOPUDB2 --port 50000 --username=db2inst1 --password=P@ssw0rd --mode=connected-users --database=SAMPLE --warning=2 --critical=3

/usr/local/nagios/libexec/check\_db2\_health --hostname KHOPUDB2 --port 50000 --username=db2inst1 --password=P@ssw0rd --mode=database-usage --database=SAMPLE --warning=80% --critical=90%

## \*\*\*

cp /home/db2inst1/sqllib/db2profile /home/nagios/

chown nagios.nagios /home/nagios/db2profile

source /home/nagios/db2profile; $USER1$/check\_db2\_health –hostname 192.168.0.99 –port 50000 --username=db2inst1 --password=P@ssw0rd --mode=connection-time --database=hello

## Sample /usr/local/nagios/etc/resource.cfg file

$USER13$=50000

$USER14$=nagios

$USER15$=nagios

## Sample /usr/local/nagios/etc/commands.cfg file

define command {

command\_name mycheck\_xi\_db2\_health

command\_line /usr/bin/env DB2INSTANCE=db2inst1 DB2\_HOME=/home/db2inst1/sqllib DB2LIB=/home/db2inst1/sqllib/lib LD\_LIBRARY\_PATH=/home/db2inst1/sqllib/lib64:/home/db2inst1/sqllib/lib64/gskit:/home/db2inst1/sqllib/lib32 $USER1$/check\_db2\_health --hostname $HOSTADDRESS$ --port $USER13$ --username=$USER14$ --password=$USER15$ --mode=$ARG2$ --database=$ARG1$ --warning=$ARG3$ --critical=$ARG4$ $ARG5$

}

## Sample /usr/local/nagios/etc/services/DB2-SERVICES.cfg file

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Connection Time

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!connection-time!1!5

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Connected Users

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!connected-users!50!100

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Database Space Usage

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!database-usage!80!90

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Tablespace Usage

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!tablespace-usage!90!98

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Tablespace Free

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!tablespace-free!15:!10:!--units MB

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Tablespace Usage - mytblname

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!tablespace-usage!90!98!--name mytblname

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Tablespace Free - mytblname

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!tablespace-free!15:!10:!--name mytblname!--units MB

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Bufferpool Hitratio

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!bufferpool-hitratio!98!90

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Bufferpool Hitratio - mypoolname

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!bufferpool-hitratio!98!90!--name mypoolname

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Bufferpool Data Hitratio

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!bufferpool-data-hitratio!98!90

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Bufferpool Data Hitratio - mypoolname

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!bufferpool-data-hitratio!98!90!--name mypoolname

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Bufferpool Index Hitratio

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!bufferpool-index-hitratio!98!90

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Bufferpool Index Hitratio - mypoolname

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!bufferpool-index-hitratio!98!90!--name mypoolname

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Index Usage

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!index-usage!98!90

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Synchronous Read Percentage

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!synchronous-read-percentage!90!80

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Asynchronous Write Percentage

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!asynchronous-write-percentage!90!80

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Lock Waits

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!lock-waits!10!100

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Lock Waiting

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!lock-waiting!2!5

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}

define service {

host\_name KPU-DB2

service\_description SAMPLE DB2 Log Space Utilization

use xiwizard\_mysqlserver\_service

check\_command mycheck\_xi\_db2\_health!SAMPLE!log-utilization!80!90

max\_check\_attempts 5

check\_interval 5

retry\_interval 1

check\_period xi\_timeperiod\_24x7

notification\_interval 1440

notification\_period xi\_timeperiod\_24x7

contact\_groups admins

register 1

}