ManageWare

**ESI Software
IBM DB2 Connect
Knowledge Module for PATROL
(DB2C KM)**

User Guide

ESI SOFTWARE

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About This Guide

The *DB2C KM User Guide* contains detailed information about the commands, parameters, and reports that the DB2C KM provides. The guide also contains instructions for loading and configuring the Knowledge Module (KM). For more detailed information, refer to the DB2C KM online help.

This guide should be used with the *PATROL User Guide* for your Console, which describes how to use PATROL to perform typical tasks.

Who Should Read This Guide

This guide is intended for middleware administrators, system administrators, and anyone who monitors an IBM DB2 Connect installation.

This guide assumes that you are familiar with your host operating system. You should know how to perform a basic set of actions in a windows environment, including:

- choosing menu commands
- moving and resizing windows
- opening icon windows
- dragging and dropping icons
- using mouse controls for your system

How This Guide Is Organized

Chapter & Title	Purpose
Chapter 1: Introduction	introduces the KM
Chapter 2: Getting Started	provides information on setting up the KM
Chapter 3: Menu Summary	discusses the menu items that the KM offers
Chapter 4: Parameter Summary	discusses the parameters that the KM offers
Chapter 5: Using the KM	provides tasks that you perform using the KM
Index	list of index entries

Related Publications

In addition to this *DB2C KM User Guide*, ESI Software provides white papers on technical subjects related to using PATROL with IBM middleware products. These papers can be requested from ESI Software at (877) 638-7033 extension 11, or email info@esisoft.us. The DB2C KM comes with extensive online help that is available through the PATROL Console Help menu option. The online documentation contains reference information about DB2C KM features and options.

PATROL product documentation consists of both hardcopy and online publications. PATROL hardcopy documentation is outlined completely in the beginning of each of their manuals. These hardcopy publications can be requested from BMC Software, Inc., or can be viewed on the BMC Software WWW site (http://www.bmc.com/) when you have registered for Customer Support. Each PATROL Console and each KM come with an extensive online help facility that is available through the PATROL Console Help menu option. The online documentation contains reference information about PATROL Console features and options about KM parameters.

Conventions

This guide contains detailed procedures about using the DB2C KM with the PATROL Console for Unix and the PATROL Console for Windows. When instructions for the two Consoles differ, you will see a heading such as "With the PATROL Console for Unix" or "With the PATROL Console for Windows."

The following special elements have been used in this guide to make it easier for you to use:

NOTE: Notes provide additional information about the current subject.

WARNING   Warnings alert you to situations that can cause problems, such as the loss of data, if you do not follow the instructions carefully.

```
All syntax, operating system terms, and literal examples are presented
in this font.
```

Italics in a command string signify variables.

Text enclosed in angle brackets (<>) denotes variable information. Replace the variable information with the information it represents.

The word *choose* is used in instruction text in the context of carrying out a series of menu choices to invoke some function. For example, choose **File => Save**.

>>   The symbol **>>** denotes one-step instructions.

Mouse Controls

Please note the function of the mouse buttons in all PATROL windows using Unix and Windows.

OS	Button	Action	Function
Unix	MB1	Click or Double Click	Selects and icon, menu command, or button; opens an icon's container.
Unix	MB2	Click	Displays an icon's InfoBox.
Unix	MB3	Click	Displays an icon's pop-up menu.
Windows	Left Mouse Button	Click or Double Click	Selects and icon, menu command, or button; opens an icon's container.
Windows	Right Mouse Button	Right Click	Displays an icon's pop-up menu.

One-button mouse devices such as those used by Apple Macintosh assign MB1 (or left mouse button) to the single mouse button and use a user-selectable combination of option and arrow keys to simulate MB2 and MB3 (or right mouse button). Refer to the documentation for the Macintosh X Window emulation software for details.

Chapter 1: Introduction

This chapter provides you with a brief overview of the DB2C KM.

KM Features

The DB2C KM contains the knowledge that PATROL uses for monitoring, analyzing, and managing activities of the IBM DB2 Connect. A Knowledge Module (KM) is a file containing knowledge in the form of command descriptions, application parameters, and recovery actions that PATROL can use to monitor operating system, network, server, and middleware events.

The DB2C KM provides a convenient and logical user interface for you to monitor the performance of an IBM DB2 Connect.

KM parameters allow you to analyze system performance quickly and easily because they can provide a detailed statement of all system activity over time. You can clearly identify peaks, troughs, and trends in the performance of system resources. By enabling you to detect problems, optimize systems, analyze trends, plan capacity, and manage multiple hosts simultaneously, the KM helps you ensure that your computing resources run efficiently 24 hours a day.

The KM allows you to:

- perform common middleware administrator functions such as starting and stopping the DB2 Connect instances

- monitor the availability of the DB2 Connect

- send parameter warning and alarm data to an event manager such as PATROL Enterprise Manager, where the data become events managed by the event manager

- retrieve historical data stored by an event manager

- display detailed information (annotation) specific to a data point on a graph

- set certain periods of time that parameters will not go into a warning or an alarm state even if their values cross alarm thresholds (blackout period)

- display predefined parameter charts that measure key server resources

Information Retrieval Method

In most cases, the DB2C KM uses the IBM DB2 Universal Database Command Line Processor (CLP) to communicate with a DB2 Connect server. Structured Query Language (SQL) statements and low-level commands are sent through the session and the results are received and processed by PATROL using PATROL Script Language (PSL).

The performance features, i.e. SQL Response and Host SQL Response, use a Java application to communicate with the host. These applications are included with the KM.

Remote Monitoring

This version of the DB2C KM is unable to monitor DB2 Connect servers that do not reside on the same machine as the PATROL agent.

Supported Operating Systems

The DB2C KM can run on the following operating systems:

• Windows NT Server 4.0 SP3 or later
• Windows 2000 Server
• AIX 4.1 or later
• Solaris 7 or later
• HP-UX 10 or 11

NOTE: The PATROL Console can be run on any of a number of platforms including Windows, Unix, and the mainframe. The requirements above are for the PATROL Agent and the DB2C KM software only.

KM Components

The DB2C KM contains a number of separate KM files. A KM file is one of the following types:

- a container application class used to group other KM application classes

- a list of other KM files

- a standard application class that contains parameters, menu commands, and InfoBoxes.

The table below briefly describes each KM file.

File Name	Type	Description
DB2C_MAIN.KML	List of KM files	This file contains a list of all the KMs for the DB2C KM. When you load this KML, all of the application KMs are loaded.
DB2C_MAIN.KM	Application class	Contains the primary DB2C KM application, called DB2 Connect, which is a container application for the other KMs.
DB2C_ADMIN_SERVER.KM	Application class	Contains the application that monitors the <Admin Server>. (Only used to monitor version 7.2 and previous.)
DB2C_INSTANCE.KM	Application class	Contains the application that monitors each <Instance>.
DB2C_INSTANCE_PARAMETER.KM	Application class	Contains the application that performs Instance Monitoring.
DB2C_DATABASE.KM	Application class	Contains the application that monitors each <Database Alias>.

Application Class Hierarchy

The KM provides a hierarchy of application classes that group all DB2 Connect instances and databases together under a single application class called "DB2 Connect." The listing below shows the entire hierarchy of application classes, menu commands, and parameters.

DB2 Connect
    KM File: DB2C_MAIN.KM
    Parameters:
        ExtraFilesList
        GlobalCollector
    Menu Commands:
        Global Collector Config
        Set Debug
        DB2C KM Logging
        Create Instance
        Refresh Parameters
        About DB2 Connect KM
**   <Admin Server> (Version 7.x only)**
        KM File: DB2C_ADMIN_SERVER.KM
        Parameters:
            AdminServerStatus
        Menu Commands:
            Start Admin Server
            Stop Admin Server
            List Admin Server Config
            Configure Admin Server
            Reset Admin Server Config
**   <Instance>**
        KM File: DB2C_INSTANCE.KM
        Parameters: None
        Menu Commands:
**   Report Configuration**
            List Nodes
            List DCS Databases
            List Databases
            List Instance DBM Config
**   Update Configuration**
**   Configure Instance DBM**
            Configure Environment
            Configure Diagnostic
            Configure Monitor
            Configure Administration
            Configure Performance
            Configure Applications
            Configure Communications
            Configure Parallel
            Reset Instance DBM Config
**   Catalog**
            Catalog TCP/IP Node
            Catalog APPC Node
            Catalog DCS Database
            Catalog Database
**   Uncatalog**

                    Uncatalog Node
                    Uncatalog DCS Database
                    Uncatalog Database
            Administration
                    Start Instance
                    Stop Instance
                    Drop Instance
                    Set Blackout Periods
                    Include Instance
                    Exclude Instance
                    Start/Stop Tracing
                    Connections
                            List Connections
                            Monitor Connections
                            Kill Connections
                            Kill All Connections
Instance Monitoring
            KM File: DB2C_INSTANCE_PARAMETER.KM
            Parameters:
                    AgentsAssignedFromPool
                    AgentsCreatedFromPool
                    AgentsRegistered
                    AgentsWaitingForToken
                    AgentUsageRatio
                    CurrentConnections
                    ConnectionsWaitingforHost
                    ConnectionsWaitingforClient
                    DB2CONNECT_IN_APP_PROCESS
                    IdleAgents
                    InstanceStatus
                    LocalConnections
                    LocalConnectionsExecuting
                    MemoryUsage (Version 8.x Only)
                    RemoteConnections
                    RemoteConnectionsExecuting
                    StolenAgents
            Menu Commands:
                    Chart Connections
                    Chart SQL Response (Instance)
                    Report Uptime
<Database Alias>
            KM File: DB2C_DATABASE.KM
            Parameters:
                    AttemptedCommitStatements
                    AttemptedRollbackStatements
                    AttemptedSQLStatements
                    ClientSQLResponseConnectTime
                    ClientSQLResponseExecuteTime
                    ClientSQLResponseTotalTime
                    CommunicationErrors
                    ConcentratorUsage
                    ConnectionStatus
                    ConnectionsWaitingforClient
                    ConnectionsWaitingforHost
                    CurrentConnections
                    FailedSQLStatements
                    FailedStatementPercent

HostSQLResponseConnectTime
HostSQLResponseDB2Time
HostSQLResponseRequestTime
HostSQLResponseResultTime
HostSQLResponseThroughput
HostSQLResponseTotalTime
OutboundBytesReceived
OutboundBytesSent
SQLResponseConnectTime
SQLResponseExecuteTime
SQLResponseTotalTime
SQLStatementThroughput
Menu Commands:
Administration
Include Database
Exclude Database
Execute SQL
Connection Status Config
Performance
SQL Response Config
Client SQL Response Config
Host SQL Response Config
Reporting
Chart SQL Response
Chart Client SQL Response
Chart Host SQL Response
DCS Database Snapshot

Application Naming Conventions

Each functional application in the KM uses the name of the object it is monitoring as its PATROL application name. The following table shows some examples.

Monitored Object	Object Name	Naming Convention	Application Name
DB2 Connect Instance	DB2	name of monitored object	DB2
DB2 Connect Database	DB2DB	name of monitored object	DB2DB

Where to Go from Here

The following table summarizes where to look for more information on using PATROL and the DB2C KM.

If you want information on...	See...
How to load the DB2C KM	*Loading the KM*
What a certain menu command does	*Chapter 3: Menu Summary*, and the DB2C KM online help.
What a certain parameter does	*Chapter 4: Parameter* Summary, and the DB2C KM online help.
How to perform a task using this KM	*Chapter 5: Using the KM*

Chapter 2: Getting Started

This chapter provides you with information that you will need to get started with the DB2C KM.

Getting the Latest Version of the KM

Whether you need an evaluation copy of the DB2 Connect KM, or if you simply need to upgrade to the latest version, please contact ESI Software using the most convenient method for you. You can simply call us at (877) 638-7033, extension 11, or send an e-mail to info@esisoft.us, indicating the platform(s) of the machines you will be monitoring, the platforms of the console machines. You can also go to the ESI Software homepage at http://www.esisoft.us and use the information request form (the "Contact Us" tab) to request the latest version of the KM.

The DB2C KM is distributed in archive format (TAR files on Unix, and self-extracting executable in Windows). We will e-mail the archives and documentation to you using the e-mail address you specify. The DB2C KM is also available on CD, along with a printed user guide, by special order.

The KM is divided into 4 archives (one for Unix console, one for Unix agent, one for Windows console, and one for the Windows agent) because it is common for a PATROL console running on one platform (e.g., Windows) to monitor an agent running on a different platform (e.g., AIX). Separate archives allow for various console/agent platform combinations. Copy each console archive file to a temporary directory on the appropriate console machine(s), and each agent archive file to a temporary directory on the appropriate agent machine(s). Then follow the installation instructions in the next section.

Installing the KM

Installing the DB2C KM is very simple, since ESI Software provides automated installation programs to put the KM's files in the appropriate directories. This task assumes you have already performed the following activities:

- installed Patrol on the target machine
- copied the installation archive file to the target machine (see previous section, *Getting the Latest Version of the KM*)

Step 1.   Log onto the target machine using the PATROL user ID.

Step 2.   Verify that the PATROL_HOME environment variable is properly set. To view its value on Windows, use the command `echo %PATROL_HOME%`, or the `set` command to view all environment variables; on Unix, use `env PATROL_HOME`.

Step 3.   For Unix, uncompress the installation archive file (`DB2C_*.tar`) in a temporary directory. For example:

```
/usr/patrol> md ManageWare
/usr/patrol> cd ManageWare
/usr/patrol/ManageWare> tar –xvf DB2C_UNIX_CONSOLE_200.tar
```

Step 4.   For Unix, an install shell script (`*_install.sh`) has been created in the temporary install directory. Run that script from the command line. For example:

```
/usr/patrol/ManageWare> agent_install.sh
```

This command runs a script that places all DB2C KM files into the proper places in the PATROL directory structure.   No user intervention is required during shell script operation, except for acknowledging that the terms of the software license has been accepted.

Step 5.   For Windows, the installation archive file (`DB2C_*.exe`) is also the installation program. Run this executable either by double-clicking on its icon or from a command line. For example:

```
C:\Temp> cd ManageWare
C:\Temp\ManageWare> DB2C_NT_CONSOLE_200.exe
```

This command brings up an InstallShield installation program that will step the user through the process of placing all DB2C KM files into the proper places in the PATROL directory structure. During this process, the user must provide the program with a main ManageWare directory that will store the README.TXT file for future reference, and temporarily store the DB2C KM files prior to their transfer to the PATROL directory structure. The user must also acknowledge that the terms of the software license have been accepted.

Step 6.   Start up a PATROL Developer Console.

Step 7.   If installing the DB2C KM to a PATROL agent machine, recycle the agent.

Step 8.   From the console, delete all application classes named DB2C_*.

Step 9.   Save the configuration, then restart the console.

Step 10. Load the KM as described below in *Loading the KM*.

The installation process will automatically put files into the appropriate directories as follows:

File extensions	Default directory
.pl, .exe or no extension	%PATROL_HOME%\bin
.km, .kml, .ctg	%PATROL_HOME%\lib\knowledge
.lib	%PATROL_HOME%\lib\psl
.bmp, .xpm, .bmk, .msk	%PATROL_HOME%\lib\images
.hlp	%PATROL_HOME%\lib\help

WARNING	The Patrol user must be a member of the SYSADM_GROUP (see *DB2 Connect User's Guide* for more information on SYSADM_GROUP). The DB2C KM will not work properly unless this is done.

NOTE:	Since some of the DB2C KM's features place a large amount of output to task windows, ESI Software recommends setting the Text Window Buffer Size at 500K. This is done by selecting **Options => Preferences => Configuration Tab** from the PATROL console menu. This will reduce the chance of data not being displayed in a task window.

NOTE:	The DB2C KM does not make use of any hidden files, registry entries, or other special operating system specific features. As a result, the installation program simply extracts files and does not need to be run on each machine. Instead, the files can simply be copied from machine to machine after the initial installation.

Uninstalling the KM

There is no automated uninstall program for the DB2C KM. However, all the DB2C KM files start with the prefix "DB2C_", or reside in the temporary installation directory.

Step 1.   Delete all files from the temporary installation directory.

For example, on Unix:

```
/usr/patrol> rm –fr ManageWare
```

Or, on Windows:

```
C:\Program Files\ManageWare> deltree /Y "DB2C KM"
```

Step 2.   Delete all files that begin with the prefix "DB2C_" from your system in these directories:

File extensions	Default directory
.pl, .exe or no extension	%PATROL_HOME%\bin
.km, .kml, .ctg	%PATROL_HOME%\lib\knowledge
.lib	%PATROL_HOME%\lib\psl
.bmp, .xpm, .bmk, .msk	%PATROL_HOME%\lib\images
.hlp	%PATROL_HOME%\lib\help

Preparing to Use the KM

After installing the DB2C KM but before loading the KM files into PATROL, you should verify that all software requirements are met, all required PATROL objects are in place, and that you have access to all required information about the DB2 Connect you want to monitor. The topics below describe the software, objects, and information needed to install and to use the DB2C KM to monitor a local DB2 Connect.

Software Requirements

- You must be running IBM DB2 Connect 7.x, or 8.x. Support for DB2 Connect version 6.1 is provided by version 1.05 of the KM.

- The Patrol user must be a member of the SYSADM_GROUP.

- PATROL for Unix or PATROL for Windows version 3.3 or later.

- The DB2C KM files must be installed on the PATROL Console machine and the PATROL Agent machine.

- All KM distribution files must have been extracted and copied to the proper place in the %PATROL_HOME% directory structure during the installation of PATROL (see *Installing the KM*, above)..

Monitoring a Remote Server

This version of the product does not support monitoring a DB2 Connect server remote from a PATROL Agent.

Information Requirements

During the setup process, you will want to verify certain information about monitored DB2 Connects. Use the following table to gather and record the pertinent DB2 Connect information.

What is required...	Values for your DB2 Connect
Patrol user ID	
Patrol user in SYSADM_GROUP?	
DB2 Connect admin server name (Version 7.x)	
DB2 Connect instance name	
DB2 Connect database name	

Loading the KM

To monitor and manage a KM, you must load the files for that KM into the PATROL Console. After you load the KM once, you may save your Console configuration, which will automatically load the KM the next time you start the PATROL Console. This task assumes that you have already performed the following activities:

- started a PATROL Developer Console
- started a PATROL Agent on each machine to be monitored
- started DB2 Connect on each machine to be monitored
- installed the KM on all console and agent machines (see *Installing the KM* section)

Step 1. Choose **File => Load KM...** from the PATROL Console menu bar.

A list of available KMs for your site appears in a dialog box. The default display is a list of *.kml files, but you can change the display to a list of all *.km files.

Step 2. Select the **DB2C_MAIN.kml** to load all DB2C KM applications. Otherwise, select the individual KM files (e.g., DB2C_*.km) that you want to load.

Step 3. Click **Open** or **OK**, depending on your PATROL Console.

Setting Up the Knowledge Module

There is no setup required for the DB2C KM. Once loaded, it automatically detects the operating environment and DB2Connect components to be monitored.

NOTE:	Since some of the DB2C KM's features place a large amount of output to task windows, ESI Software recommends setting the Text Window Buffer Size at 500K. This is done by selecting **Options => Preferences => Configuration Tab** from the PATROL console menu. This will reduce the chance of data not being displayed in a task window.

NOTE:	ESI Software recommends keeping the console's system output window open at all times (see *Reviewing the System Output Window*). Most errors occurring in the KM display complete information in the system output window, and only a brief notification of error in a message box. Some KM functions, such as the global collector, only display error conditions to the system output window.

NOTE:	To allow the DB2C KM to monitor and send alerts when no console is running, you will need to "pre-load" it. Consult the PATROL documentation for detailed instructions on pre-loading KM's.

If a Problem Occurs

The first thing to do if a problem occurs is to open the system output window and read the messages. See *Reviewing the System Output Window* later in this manual.

NOTE:	ESI Software recommends keeping the console's system output window open at all times. Most errors occurring in the KM display complete information in the system output window, and only a brief notification of error in a message box. Some KM functions, such as the global collector, only display error conditions to the system output window.

Reviewing the System Output Window

This task describes how to review the computer's system output window for error messages.

>>   Access the system output window in one of two ways:

- With a PATROL Console for Unix, double-click on the computer instance icon.

- With a PATROL Console for Windows, choose **Show System Output Window** from the computer instance pop-up menu.

The system output window is displayed.

Reviewing an InfoBox

This task describes how to review InfoBox information.

>>   Access the instance InfoBox in one of two ways:

- From a PATROL Console for Unix, click MB2.

- From a PATROL Console for Windows, choose **InfoBox** from the instance pop-up menu.

Help

Help describes the function of the currently displayed window or dialog box and the use of its elements. You can display a list of help topics and search for a specific topic. The tasks in this section describe how to access help topics and context-sensitive help from a PATROL Console for Unix and a PATROL Console for Windows.

To access KM help topics from the PATROL Console for Unix

Step 1.   Choose **Help => Knowledge Module & Misc...** from the PATROL Console menu bar. A dialog box appears listing the loaded KM help files.

Step 2.   Select DB2C_HELP and click **GoTo...** The KM Help Topics screen displays.

To access KM help topics from the PATROL Console for Windows

Step 1.   Choose **Help => Help Topics** from the PATROL Console menu bar. A Help contents page containing a list of Help topics is displayed.

Step 2.   Double-click the PATROL Knowledge Modules book. The PATROL Knowledge Modules book opens.

Step 3.   Double-click the DB2C KM book. The DB2C KM help system appears.

To access context-sensitive application help from the PATROL Console for Unix

>>   Select an application from **Choose Help => This Application** from the List of Applications Classes window or click the **Show Help** button on the Application Definition dialog box.

To access context-sensitive parameter help from the PATROL Console for Unix

>>   Choose **Info** from a parameter pop-up menu; choose **Help** from a parameter window; or click the **Show Help** button on the Parameter Definition dialog box.

To access context-sensitive menu command help from the PATROL Console for Unix

>>   Choose **Help** from a menu command response window.

To access context-sensitive application help from the PATROL Console for Windows

>>   Choose **Help On** from an application pop-up menu; or from the Application Definition dialog box, click the **Help** tab; then click the **Show Help** button.

To access context-sensitive parameter help from the PATROL Console for Windows

>>   Choose **Help On** from a parameter pop-up menu; choose **Help** from a parameter window; or from the Parameter dialog box, click the **Help** tab; then click the **Show Help** button.

To access context-sensitive menu command help from the PATROL Console for WINDOWS

>>   Choose **Help** from a menu command response window.

Where to Go from Here

The following table summarizes where to look for more information on using PATROL and the DB2C KM.

If you want information on...	See...
What a certain menu command does	*Chapter 3: Menu Summary*, and the DB2C KM online help.
What a certain parameter does	*Chapter 4: Parameter* Summary, and the DB2C KM online help.
How to perform a task using this KM	*Chapter 5: Using the KM*

Chapter 3: Menu Summary

This chapter describes the application menu commands for the DB2C KM.

Each section describes a different menu command. The menu command name is displayed in bold at the top of each section. Below that is list of properties for the menu commands, such as the command path and type. Following that is a brief description of what action is performed when the menu command is executed, and possibly a screen-shot of the resulting window or report. The description may include listings of parameters that are referenced or modified in the command, and any other fields that appear on response windows.

For ease of reference, the menu commands are listed in alphabetical order.

Menu Command Properties

Command Path: Specifies where the menu command resides in the application menu hierarchy.

Type: Specifies whether the item is a menu command group, menu command, or application instance.

Version: Specifies the version or versions of DB2 Connect for which this menu is included.

For descriptions of PATROL Console menu commands, refer to the PATROL Users Guide for your console.

Command Results Notification

Menu commands either take immediate action, or display a response window that allows the user to enter information before confirming the action to be taken. Unless otherwise noted, whether successful or not, all commands display a dialog box indicating success or failure. On failure, only a notification message is displayed in the dialog box. The full error information will be output to the system output window.

About DB2 Connect KM

Displays contact information for ESI Software, as well as the version of this knowledge module.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => About DB2 Connect
                  KM

Type: Menu Command

Version: All

Executing the **About DB2 Connect KM** command brings up a dialog box that displays the version of the DB2C KM running on the agent, as well as telephone numbers and web addresses to use to contact ESI Software.

Catalog APPC Node

Allows the user to add an APPC node entry to the DB2 Connect node directory. The Advanced Program-to-Program Communications protocol is used to access the remote node

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration => Catalog => Catalog APPC Node

Type: Menu Command

Version: All

Executing the **Catalog APPC Node** command brings up a response window with the following fields:

Field Label	Description
Node Name	A local alias for the node to be cataloged. This is an arbitrary name on the DB2 Connect server machine, used to identify the node. It should be a meaningful name to make it easier to remember. The name must conform to database manager naming conventions. It must be 1 to 8 characters in length, cannot be USERS, ADMINS, GUESTS, PUBLIC, or LOCAL, and it cannot begin with IBM, SQL, or SYS.
Remote Symbolic Destination Name	Specifies the symbolic destination name of the remote partner node. The name corresponds to an entry in the CPI Communications side information table that contains the necessary information for the client to set up an APPC connection to the server (partner LU name, mode name, partner TP name). Maximum length is 8 characters
Security	Specifies what security information (user ID, password) will be sent to the partner LU in the allocation request. Can be one of three settings: PROGRAM - Both a user name and password are sent. NONE - No security information is sent. SAME - Only a user name is sent, together with an indicator that the user name has been "already verified". The partner must be configured to accept "already verified" security.
Comment	A comment that helps to describe the node. Maximum length is 30 characters.

The user must enter a node name and the destination name, and select the security setting. The comment field is optional. Clicking **Cancel** discards any data entered and closes the window. Clicking **OK** attempts to add the new APPC node, then displays a dialog box indicating success or failure.

Please see the DB2 Connect Documentation for more information on cataloging APPC nodes.

Catalog Database

Stores database location information in the system database directory. Since the database is actually a gateway connection to a host database, the directory entry type will always be remote.

Databases on the same node as the database manager instance are cataloged as indirect entries. Databases on other nodes are cataloged as remote entries.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Catalog => Catalog Database

Type: Menu Command

Version: All

Executing the **Catalog Database** command brings up a response window with the following fields:

Field Label	Description
DCS Database	Specifies the name of the database to catalog. The Node and DCS Database must be cataloged before cataloging the database.
Database Alias	Specifies an alias as an alternate name for the database being cataloged. It can only contain 1 to 8 characters and cannot be USERS, ADMINS, GUESTS, PUBLIC, or LOCAL. It cannot begin with IBM, SQL, or SYS. It must also be unique within the Database Directory. If an alias is not specified, the database manager uses the DCS Database name as the alias.
Node Name:	Specifies the name of the node where the database being cataloged resides. This name should match the name of an entry in the node directory. If the node name specified does not exist in the node directory, a warning is returned, but the database is cataloged in the system database directory. The Node and DCS Database must be cataloged before cataloging the database.
Comment	A comment that helps to describe the database. Maximum length is 30 characters.

For more complete information on the above fields, refer to the *DB2 Connect User's Guide*.

The user must enter the DCS database, alias, and node names. The comment field is optional. Clicking **Cancel** discards any data entered and closes the window. Clicking **OK** attempts to catalog the database, then displays a dialog box indicating success or failure. If successful, an icon for the new database will appear in the console window.

Please see the DB2 Connect Documentation for more information on cataloging databases.

Catalog DCS Database

Stores information about remote databases in the Database Connection Services (DCS) directory. These databases are accessed through an Application Requester (AR), such as DB2 Connect. Having a DCS directory entry with a database name matching a database name in the system database directory invokes the specified AR to forward SQL requests to the remote server where the database resides.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Catalog => Catalog DCS Database

Type: Menu Command
Version: All

Executing the **Catalog DCS Database** command brings a response window with the following fields:

Field Label	Description
Local Database	Specifies the alias of the target database to catalog. This alias must match the database name entered during the remote cataloging of this database in the system database directory
Target Database	Specifies the name of the target host database to catalog.
Comment	A comment that helps to describe the DCS database. Maximum length is 30 characters.
Parameters:	
SQLCODE Mapping File/No Mapping	The name of an SQLCODE mapping file that overrides the default SQLCODE mapping. To turn off SQLCODE mapping, click on the "No Mapping" checkbox. Default for the checkbox is unchecked, and the file name is not initially set.
	Different IBM relational database products do not always produce the same SQLCODEs for similar errors. Even when the SQLCODE is the same, it may be accompanied by tokens that are specified differently. The token list is passed in the SQLERRMC field of the SQLCA. By default, DB2 Connect maps SQLCODEs and tokens from each IBM host or AS/400 database server to the appropriate DB2 Universal Database SQLCODEs. No mapping is required for OS/2 and UNIX-based DB2 systems.
Disconnect Application	If checked, applications will be disconnected from the host or AS/400 database server database when one of the following SQLCODES is returned: SQL30000N, SQL30040N, SQL30050N, SQL30051N, SQL30053N, SQL30060N, SQL30070N, SQL30071N, SQL30072N, SQL30073N, SQL30074N, SQL30090N. If not checked, a disconnect will be performed only when the following SQLCODEs are returned: SQL30020N, SQL30021N, SQL30041N, SQL30061N, SQL30081N. Default is unchecked.
	For explanations of these codes, refer to the *DB2 Connect Message Reference*.
	Note: If DB2 Connect disconnects due to an error, a rollback will be done automatically.

Field Label	Description
Interrupt Enabled	If checked (default is unchecked), configures the DCS Database to enable interrupts as follows: If a client application issues an interrupt while connected to the host or AS/400 database server, DB2 Connect will perform the interrupt by dropping the connection and rolling back the unit of work. This interrupt behavior is supported on AIX, OS/2, Windows NT, and Windows 2000.
SYSPLEX Enabled	If checked, enables SYSPLEX. Default is unchecked. SYSPLEX permits DB2 Connect to seamlessly transfer an incoming connection from one remote database server to a designated backup server in the event that the first server fails.
Date Format	Specifies the date format for the database, such as "MMDDYYYY".
PEM Symbolic Destination Name	Specifies the symbolic destination name to be used for Password Expiration Management (PEM). The value specified for <name> is case sensitive.
Bidirectional CCSID	Specifies the Bidirectional (BiDi) CCSID to be used to override the default server database BiDi CCSID. Note: the environment variable or registry value DB2BIDI has to be set to YES in order for the BIDI parameter to take effect.

For more complete information on the above fields, refer to the *DB2 Connect User's Guide*.

The user must enter the local and target database names. The comment field and parameters are optional. Clicking **Cancel** discards any data entered and closes the window. Clicking **OK** attempts to add the new DCS Database, then displays a dialog box indicating success or failure.

Please see the DB2 Connect Documentation for more information on cataloging DCS databases.

Catalog TCP/IP Node

Allows the user to add a new TCP/IP node entry to the DB2 Connect node directory. The TCP/IP communications protocol is used to access the remote node.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Catalog => Catalog TCP/IP Node

Type: Menu Command

Version: All

Executing the **Catalog TCP/IP Node** command brings up a response window with the following fields:

Field Label	Description
Node Name	A local alias for the node to be cataloged. This is an arbitrary name on the DB2 Connect server machine, used to identify the node. It should be a meaningful name to make it easier to remember. The name must conform to database manager naming conventions. It must be 1 to 8 characters in length, cannot be USERS, ADMINS, GUESTS, PUBLIC, or LOCAL, and it cannot begin with IBM, SQL, or SYS.
Remote Hostname or IP Address	The host name or IP address of the node where the target database resides. The host name is the name of the node that is known to the TCP/IP network. Maximum length is 255 characters.
Service Name or Port #	Specifies the service name or the port number on which the target database is listening for connections. Maximum length is 14 characters. This field is case sensitive.
Comment	A comment that helps to describe the node. Maximum length is 30 characters.

The user must enter a node name, the remote hostname (or IP address), and the service name or port number. The comment field is optional. Clicking **Cancel** discards any data entered and closes the window. Clicking **OK** attempts to add the new TCP/IP node, then displays a dialog box indicating success or failure.

Please see the DB2 Connect Documentation for more information on cataloging TCP/IP nodes.

Chart Client SQL Response

Charts the Client SQL Response times (ClientSQLResponseConnectTime, ClientSQLResponseExecuteTime, ClientSQLResponseTotalTime) on the same graph.

NOTE: Data collection for the Client SQL Response times must be enabled via Client SQL Response Config before any data will be accumulated for this command to display.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Reporting => Chart Client SQL Response

Type: Menu Command

Version: All

Executing the **Chart Client SQL Response** command displays a graph showing the following parameters charted under the given labels. Please see Chapter 4: Parameter Summary for detailed information about these parameters.

| Parameter Label	Parameter Name
Time required to connect to database	ClientSQLResponseConnectTime
Time required to execute SQL and return results	ClientSQLResponseExecuteTime
Total time to execute SQL and return results	ClientSQLResponseTotalTime

Chart Connections

Charts the history of CurrentConnections in a single report, combining graphs of the parameter for each database belonging to the current instance.

Command Path: Instance Monitoring => Right-Click Menu => KM Commands => Chart Connections

Type: Menu Command

Version: All

Executing the **Chart Connections** command displays a graph similar to the following:
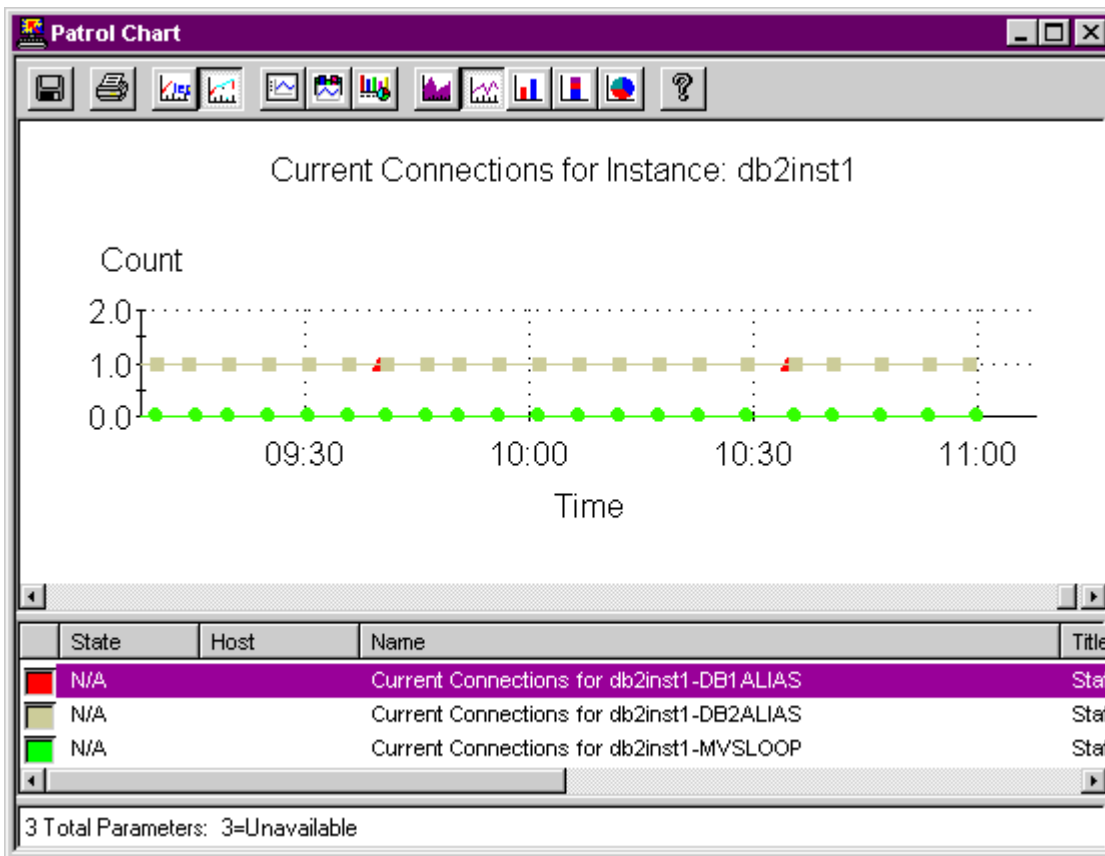
Figure 1   Graph displayed by the Chart Connections menu command

The following labels and parameters are relevant to the **Chart Connections** command. Please see Chapter 4: Parameter Summary for detailed information about these parameters.

Parameter Label	Parameter Name
Current Connections for <database>	CurrentConnections

Chart Host SQL Response

Charts   the   Host   SQL   Response   times   (HostSQLResponseConnectTime, HostSQLResponseDB2Time,   HostSQLResponseRequestTime,   HostSQLResponseResultTime, and HostSQLResponseTotalTime) on the same graph.

NOTE: Data collection for the Host SQL Response times must be enabled via Host SQL Response Config before any data will be accumulated for this command to display.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Reporting => Chart Host SQL Response

Type: Menu Command

Version: All

Executing the **Chart Host SQL Response** command displays a graph showing the following parameters charted under the given labels. Please see Chapter 4: Parameter Summary for detailed information about these parameters.

Parameter Label	Parameter Name
Time required to connect to the database	HostSQLResponseConnectTime
Time required to send request to the mainframe	HostSQLResponseRequestTime
Time required to execute SQL	HostSQLResponseDB2Time
Time required to return results	HostSQLResponseResultTime
Total time	HostSQLResponseTotalTime

Chart SQL Response (Database)

Charts the SQL Response times (SQLResponseConnectTime, SQLResponseExecuteTime, SQLResponseTotalTime) on the same graph.

NOTE:	Data collection for SQLResponseConnectTime, SQLResponseExecuteTime, and SQLResponseTotalTime must be enabled via SQL Response Config before any data will be accumulated for this command to display.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Reporting => Chart SQL Response

Type: Menu Command

Version: All

Executing the **Chart SQL Response** command displays a graph showing the following parameters charted under the given labels. Please see Chapter 4: Parameter Summary for detailed information about these parameters.

Parameter Label	Parameter Name
Time required to connect to database	SQLResponseConnectTime
Time required to execute SQL and return results	SQLResponseExecuteTime
Total time to execute SQL and return results	SQLResponseTotalTime

Chart SQL Response (Instance)

Charts the history of SQL Response times in a single report, combining graphs of the SQLResponseTotalTime parameter for each database belonging to the current instance.

NOTE:	Data collection for SQLResponseTotalTime must be enabled via SQL Response Config before any data will be accumulated for this command to display.

Command Path: Instance Monitoring => Right-Click Menu => KM Commands => Chart SQL Response

Type: Menu Command

Version: All

Executing the **Chart SQL Response** command displays a graph showing the following parameter charted once for each database belonging to the current instance, using the given label with the database name replacing "<database>". Please see Chapter 4: Parameter Summary for detailed information about this parameter.

Parameter Label	Parameter Name
Total SQL Response Time for <database>	SQLResponseTotalTime

Client SQL Response Config

Allows the user to enable or disable the collection of the ClientSQLResponse parameters (ClientSQLResponseConnectTime,   ClientSQLResponseExecuteTime,   and ClientSQLResponseTotalTime).

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Performance
                            => Client SQL Response Config

Type: Menu Command

Version: All

Executing the **Client SQL Response Config** command displays a response window with the following fields:

Field Label	Description
Client Host Name	Host name of the machine running the client application DB2C_sqlResp.exe.
Client Database Alias	Database alias name on client machine pointing to the DB2 Connect database on the agent machine to be monitored.
Host User ID	User ID to login to the DB2 database on the mainframe.
Host Password	Password to login to the DB2 database on the mainframe.
SQL Statement	The SQL statement to be executed on the host database. Must be a valid statement for the host database
Enable/Disable	Indicates whether the Client SQL Response parameters will be collected by the GlobalCollector. Disabled by default.

Collection of the Client SQL Response parameters is disabled by default. Enter the name of the client machine, the name of the DB2 Connect database alias for the current database on the client machine, a user ID and password, and a valid SQL statement. Then set the flag to the desired setting and click **Save** to effect the changes. Clicking **Cancel** will close the dialog without taking any action.

See *How to Set Up Client SQL Response Monitoring* for more information about this topic.

Configure Admin Server

Allows the user to modify the configuration of the DB2 Connect Admin Server.

Command Path: <Admin Server> => Right-Click Menu => KM Commands => Configure Admin
                  Server

Type: Menu Command

Version: 7.x

Executing the **Configure Admin Server** command brings up the following response window:

Figure 2   Response window from the Configure Admin Server menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes and prompt the user to restart the Admin Server. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Configure Administration

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with administration of the instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Configure Instance DBM => Configure Administration

Type: Menu Command

Version: All

Executing the **Configure Administration** command brings up the following response window:

Figure 3   Response window from the Configure Administration menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes and prompt the user to restart the instance DBM. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Configure Applications

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with agents and applications.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                 => Configure Instance DBM => Configure Applications

Type: Menu Command

Version: All

Executing the **Configure Applications** command brings up the following response window:

Figure 4   Response window from the Configure Applications menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Configure Communications

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with communications.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Configure Instance DBM => Configure Communications

Type: Menu Command

Version: All

Executing the **Configure Communications** command brings up the following response window:

Figure 5   Response window from the Configure Communications menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.
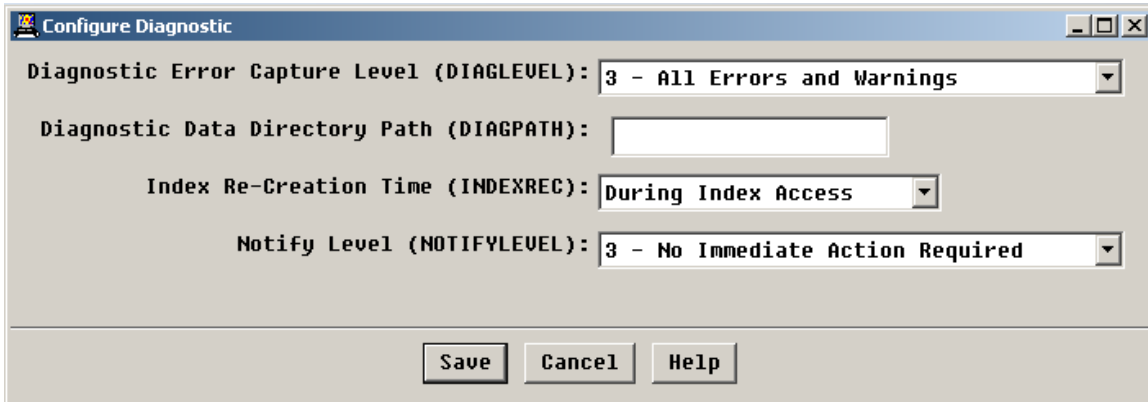
Configure Diagnostic

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with DB2 Connect diagnostics.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                   => Configure Instance DBM => Configure Diagnostic

Type: Menu Command

Version: All

Executing the **Configure Diagnostic** command brings up the following response window:

Figure 6   Response window from the Configure Diagnostic menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Configure Environment

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with the DB2 Connect environment.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Configure Instance DBM => Configure Environment

Type: Menu Command

Version: All

Executing the **Configure Environment** command brings up the following response window:

Figure 7   Response window from the Configure Environment menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in parentheses in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.
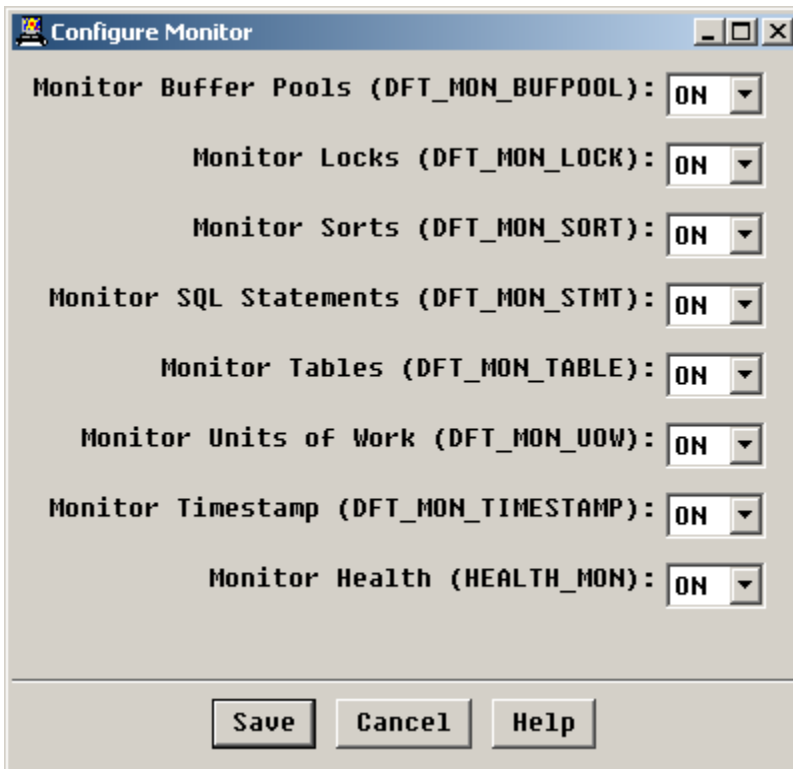
Configure Monitor

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with the DB2 Connect monitor.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Configure Instance DBM => Configure Monitor

Type: Menu Command

Version: All

Executing the **Configure Monitor** command brings up the following response window:

Figure 8   Response window from the Configure Monitor menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in parentheses in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Configure Parallel

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with parallelism.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Configure Instance DBM => Configure Parallel

Type: Menu Command

Version: All

Executing the **Configure Parallel** command brings up the following response window:

Figure 9   Response window from the Configure Parallel menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in parentheses in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Configure Performance

Allows the user to modify configuration settings for the DB2 Connect instance, in particular, those settings dealing with performance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                 => Configure Instance DBM => Configure Performance

Type: Menu Command

Version: All

Executing the **Configure Performance** command brings up the following response window:

```
Configure Performance                                                    _ □ X

        Database System Monitor Heap Size (MON_HEAP_SZ): [66        ]   0 - 60000 (4KB Pages)

             UDF Shared Memory Set Size (UDF_MEM_SZ): [          ]   128 - 60000 (4KB Pages)

            Default Backup Buffer Size (BACKBUFSZ): [1024      ]   16 - 524288 (4KB Pages)

                  Restore Buffer Size (RESTBUFSZ): [1024      ]   16 - 524288 (4KB Pages)

                  Audit Buffer Size (AUDIT_BUF_SZ): [0         ]   0 - 65000 (4KB Pages)

               Sort Heap Threshold (SHEAPTHRES): [10000     ]   250 - 2097152 (4KB Pages)

           Directory Cache Support (DIR_CACHE): [YES ▼]

                  Agent Stack Size (AGENT_STACK_SZ): [16        ]   8 - 1000 (4KB Pages)

       Minimum Commited Private Memory (MIN_PRIV_MEM): [32        ]   32 - 112000 (4KB Pages)

  Private Memory Threshold (PRIV_MEM_THRESH) [NT ONLY]: [20000     ]   -1, 32 - 112000 (4KB Pages)

     Maximum Java Interpreter Heap Size (JAVA_HEAP_SZ): [512       ]   0 - 524288 (4KB Pages)

    Application Support Layer Heap Size (ASLHEAPSZ): [15        ]   1 - 524288 (4KB Pages)

                 Query Heap Size (QUERY_HEAP_SZ): [1000      ]   2 - 524288 (4KB Pages)

                   DRDA Heap Size (DRDA_HEAP_SZ): [128       ]   16 - 60000 (4KB Pages)

                 Client I/O Block Size (RQRIOBLK): [32767     ]   4096 - 65535 (Bytes)

 DOS Requestor I/O Block Size (DOS_RQRIOBLK) [NT ONLY]: [4096      ]   4096 - 65535 (4KB Pages)

       Transaction Resync Interval (RESYNC_INTERVAL): [180       ]   1 - 60000 Seconds

              Sync Point Manager Name (SPM_NAME): [JURA      ]

    Sync Point Manager Log File Size (SPM_LOG_FILE_SZ): [256       ]   4 - 1000 (4KB Pages)

 Sync Point Manager Resync Agent Limit (SPM_MAX_RESYNC): [20        ]   10 - 256

       Sync Point Manager Log File Path (SPM_LOG_PATH): [          ]

   Database Manager Instance Memory (INSTANCE_MEMORY): [AUTOMATIC ]   8 - 524288 (4KB Pages)

                         [ Save ]  [ Cancel ]  [ Help ]
```

Figure 10   Response window from the Configure Performance menu command

The response window's fields are described in the DB2 Connect user documentation. Reference the uppercase parameter name in parentheses in the field label.

After making changes to the settings on the window, clicking **Save** will save the changes. Clicking **Cancel** will close the dialog without taking any action, thus reverting to the previous settings.

Connection Status Config

Allows the user to enable or disable the collection of the ConnectionStatus parameter. When enabled, the collector will attempt to connect to the database using the supplied User ID and Password. Command Path: <Database Alias> => Right-Click Menu => KM Commands => Administration => Connection Status Config

Type: Menu Command

Version: All

Executing the **Connection Status Config** command brings up a response window with the following fields:

Field Label	Description
Host User ID	User ID used to connect to the host database.
Password	Password for the specified user ID.
Enable/Disable	Radio buttons indicating whether the ConnectionStatus parameter will be collected by the GlobalCollector. Disabled by default.

Collection of ConnectionStatus is disabled by default. Enter a user ID and password, set the flag to the desired setting, and then click **Save** to effect the changes. Clicking **Cancel** will close the dialog without taking any action.

Create Instance

Allows the user to create a new instance of the DB2 Connect server.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => Create Instance

Type: Menu Command

Version: All

Executing the **Create Instance** command brings up a response window with the following fields:

Field Label	Description
Instance Name	Name for the DB2 Connect instance must be 1 to 8 characters in length, and not equal to USERS, ADMINS, GUESTS, PUBLIC, or LOCAL, nor can it begin with IBM, SQL, or SYS.
Fenced User ID (Unix only)	This parameter is the user under which the fenced user-defined functions (UDFs) and stored procedures will execute. This is not required if you install the DB2 client or the DB2 Software's Developer Kit. For other DB2 products, this is a required parameter. Note: the fenced ID may not be "root" or "bin".
Communication Protocol	Communication protocols to be used by this instance. Choices are TCP/IP or APPC, or both.
TCP/IP Service Name or Port # (Unix only)	Specifies the TCP/IP service name or port number to be used by the instance. This value will then be set in the instance's database configuration file.
Root Password (Unix only)	Password for the root user, used to create a directory for the instance in the DB2 Connect directory structure.
User ID (WINDOWS only)	Specifies the logon and account name of the DB2 Service.
Password (WINDOWS only)	Specifies the logon and account password of the DB2 Service.

The user must enter a name for the new instance, select a protocol, and enter a valid TCP/IP service name. On Unix, the fenced user ID and root password are also required, while on WINDOWS, the user ID and password are required. Clicking **Cancel** discards any data entered and closes the window without taking any action. Clicking **OK** attempts to create the instance, then displays a dialog box indicating success or failure. If successful, an icon for the new instance will appear in the console window.

DB2C KM Logging

Allows the user to enable logging of instance parameters, database parameters or all parameters collected by the DB2C KM directly to a file. This file is a comma-delimited or tab-delimited file that can be used by external analysis programs.

This feature is disabled by default.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => DB2C KM Logging

Type: Menu Command

Version: All

Executing the **DB2C KM Logging** command brings up a response window with the following fields:The dialog's fields are described below. Please see Chapter 4: Parameter Summary for detailed information about the parameters.

Field Label	Description
Instance Logging	Controls whether to include instance parameters in the log. Default is to include (checked). See GlobalCollector for details on which parameters are included.
Database Logging	Controls whether to include database parameters in the log. Default is to include (checked). See GlobalCollector for details on which parameters are included.
Full Path to DB2C Log File	The full path to the DB2C KM Logging file. The logging file is located on the PATROL agent machine.
Enable (Y/N)	Controls whether or not DB2C KM Logging is enabled. Default is disabled (unchecked).
Tab Delimiter/Comma Delimiter	Determines which delimiter is used to separate fields in the DB2C KM Logging file – a tab, or a comma. Default value is comma.

First, the user must select at least one class of parameters to log. This is done by selecting the appropriate checkbox in the Parameter (Level) section of the dialog. The user must then enter the full path to the log file *on the agent machine* prior to enabling logging. Clicking **Cancel** discards any data entered and closes the window without taking any action. Clicking **OK** attempts to start logging, then displays a dialog box indicating success or failure.

WARNING	Always change or clear the DB2C KM logging file when changing delimiters.
	Changing delimiters after logging has already begun will result in a corrupt logging file that cannot be imported to other applications for analysis. In this case, no warning is issued by the KM.

Log File Format

Following are two sample fragments of a logging file. The first example shows a fragment delimited by commas:

```
Fri Jul 21 17:03:03 2000,db2adm,,AdminServerStatus,1
Fri Jul 21 17:03:03 2000,db2inst4,,InstanceStatus,1
Fri Jul 21 17:03:15 2000,db2inst1,DB1ALIAS,SQLResponseConnectTime,0.270000
```

The second example shows the same fragment delimited by tabs (the vertical bars show where the tabs are located):

```
Fri Jul 21 17:03:03 2000 | db2adm  |          | AdminServerStatus      | 1
Fri Jul 21 17:03:03 2000 | db2inst4|          | InstanceStatus         | 1
Fri Jul 21 17:03:15 2000 | db2inst1| DB1ALIAS | SQLResponseConnectTime | 0.270000
```

The following table describes the columns of the log file.

Column #	Column Description
1	Timestamp when the parameter's value was set.
2	DB2 Connect instance to which this parameter belongs (if applicable).
3	DB2 Connect database to which this parameter belongs (if applicable).
4	Name of the parameter whose value changed.
5	New value of the parameter.

DCS Database Snapshot

Displays a snapshot report in a task window. This report contains information concerning the communication between the DB2 Connect gateway and the host database.

The data displayed in this report is gathered by the GlobalCollector.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Reporting => DCS Database Snapshot

Type: Menu Command

Version: All

Executing the **DCS Database Snapshot** command creates the following report in a task window:

```
            DCS Database Snapshot

DCS database name                       = DCS89432
Host database name                      = DB2SAMP
First database connect timestamp        = 08-27-2003 10:44:58.888258
Most recent elapsed time to connect     = 3.494664
Most recent elapsed connection duration = 0.000000
Host response time (sec.ms)             = 0.000000
Last reset timestamp                    =
Number of SQL statements attempted      = 0
Commit statements attempted             = 0
Rollback statements attempted           = 0
Failed statement operations             = 0
Total number of gateway connections     = 1
Current number of gateway connections   = 1
Gateway conn. waiting for host reply    = 0
Gateway conn. waiting for client request = 1
Gateway communication errors to host    = 0
Timestamp of last communication error   =
High water mark for gateway connections = 1
Outbound bytes sent                     = 0
Outbound bytes received                 = 0
Host execution elapsed time             = 0.000000
```

The report's fields are described in the DB2 Connect Documentation for the DCS Database Snapshot.

Drop Instance

Allows the user to drop this DB2 Connect instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration => Drop Instance

Type: Menu Command

Version: All

Executing the **Drop Instance** command brings up a confirmation dialog box warning the user that proceeding with this command will delete the instance. The user may cancel the operation by clicking **Cancel**, or drop the instance by clicking **OK**.

Exclude Database

Temporarily excludes this DB2 Connect database from monitoring.

Information about the database is NOT removed from the PATROL Agent configuration database. However, while the database is excluded, none of its parameters will be collected, and none of its KM commands will be accessible, except for Include Database.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Administration
                 => Exclude Database

Type: Menu Command

Version: All

See also Include Database.

Executing the **Exclude Database** command does not bring up a dialog box. However, the database's icon is put in the disabled state.

Exclude Instance

Temporarily excludes this DB2 Connect instance and all associated databases from monitoring.

Information about the instance is NOT removed from the PATROL Agent configuration database. However, while the instance is excluded, none of its parameters, or its databases' parameters will be collected, and none of its KM commands will be accessible, except for Include Instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                 Exclude Instance

Type: Menu Command

Version: All

See also Include Instance.

Executing the **Exclude Instance** command does not bring up a dialog box. However, the instance's icon is put in the disabled state.

Execute SQL

Allows the user to execute a SQL command against the database.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Administration
                                 => Execute SQL

Type: Menu Command

Version: All

Executing the **Execute SQL** command displays a response window with the following fields:

Field Label	Description
Host User ID	A valid user ID on the host database that will allow the execution of the SQL statement
Password	Password for the host user ID.
SQL Statement	A valid SQL statement for the host database.

Clicking **Cancel** discards any data entered and closes the window without taking any action. Clicking **OK** executes the specified command against the host database using the supplied user ID and password. The results are printed in a PATROL task window.

Global Collector Config

Available from developer console ONLY.

Allows the user to enable or disable Instance-level parameters or Database-level (Gateway Connection) parameters. Although similar enabling and disabling can be done for individual parameters by deactivating each from its KM, disabling a parameter in such a fashion does not stop the GlobalCollector's code from running. This command allows the user to prevent that code from running. See the GlobalCollector parameter for more information about data collection and the parameter level groupings.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => Global Collector Config

Type: Menu Command

Version: All

Executing the **Global Collector Config** command displays a response window with the following fields:

Field Label	Description
Instance Monitoring	Indicates whether Instance-level parameters will be collected by the GlobalCollector. Default value is "Enabled".
Database Monitoring	Indicates whether Database-level (i.e., gateway connection) parameters will be collected by the GlobalCollector. Default value is "Enabled".

Both these settings are enabled by default. Set the flags to the desired settings, then click **Save** to effect the changes. Clicking **Cancel** will close the dialog without taking any action.

WARNING	Disabling either Instance Monitoring or Database Monitoring will prevent several consumer parameters from being updated. Review the GlobalCollector parameter section to ensure you are not inadvertently disabling a desired parameter.

Host SQL Response Config

Allows the user to enable or disable the collection of the Host SQL Response parameters (HostSQLResponseDB2Time, HostSQLResponseResultTime, HostSQLResponseConnectTime, HostSQLResponseRequestTime, HostSQLResponseTotalTime, HostSQLResponseThroughput).

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Performance
                 => Host SQL Response Config

Type: Menu Command

Version: All

Executing the **Host SQL Response Config** command displays a response window with the following fields:

Field Label	Description
Host User ID	User ID used to connect to the host database.
Password	Password for the specified user ID.
Schema	Schema to which the Host SQL stored procedure was added. The schema name is prepended to the Host SQL stored procedure name for execution.
SQL Statement	An SQL statement to run against the host database for response timing purposes. Each time the GlobalCollector is run, this statement is executed against the host database and the resulting timing information is stored in HostSQLResponseConnectTime, HostSQLResponseRequestTime, HostSQLResponseDB2Time, HostSQLResponseResultTime, HostSQLResponseTotalTime, and HostSQLResponseThroughput. There is no default value for this field.
Enable/Disable	Indicates whether the Host SQL Response parameters will be collected by the GlobalCollector. Disabled by default.

Collection of the Host SQL Response parameters is disabled by default. Enter a user ID and password, a valid SQL statement, set the flag to the desired setting, then click **Save** to effect the changes. Clicking **Cancel** will close the dialog without taking any action.

See *How to Set Up Host SQL Response Monitoring* for more information about this topic.

WARNING	Host SQL Response requires the installation of a DB2 stored procedure before the feature can be enabled The stored procedure is included with the KM. Refer to the section, How to Set Up Host SQL Response Monitoring, for more information.

Include Database

Includes a previously excluded DB2 Connect database for monitoring.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Administration
                 => Include Database

Type: Menu Command

Version: All

See also Exclude Database.

Executing the **Include Database** command does not bring up a dialog box. However, the database's icon is set to the **OK** state.

Include Instance

Includes a previously excluded DB2 Connect instance and its associated databases for monitoring.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                 Include Instance

Type: Menu Command

Version: All

See also Exclude Instance.

Executing the **Include Instance** command does not bring up a dialog box. However, the instance's icon is set to the **OK** state.

Kill All Connections

Kills all active client connections to the current instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                  Connections => Kill All Connections

Type: Menu Command

Version: All

If no connections exist, executing the **Kill All Connections** command brings up a dialog indicating that fact.   If there are connections to the instance, this command brings up a confirmation dialog box. Selecting the OK button will terminate all connections to the instance. Selecting the Cancel button will cancel the operation.

Kill Connections

Allows the user to kill one or more client connections to the DB2 Connect instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                 Connections => Kill Connections

Type: Menu Command

Version: All

If no connections exist, executing the **Kill Connections** command brings up a dialog indicating that fact. If there are connections to the instance, this command brings up the following dialog box:
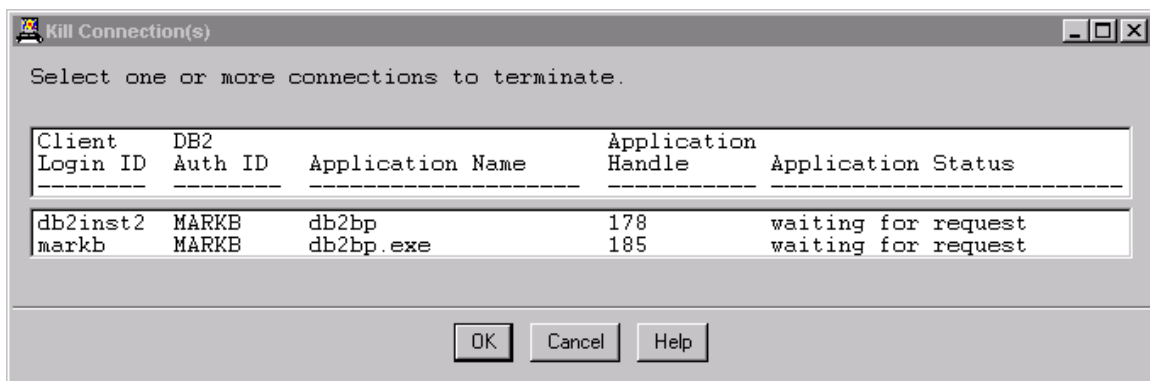
Figure 11   Dialog box from the Kill Connections menu command

The window displays a list of up to 200 client connections, sorted by client login. If there are more than 200 connections, a response window will appear first, prompting for query criteria to filter the list. The client connection list can be filtered by client login, DB2 authorization ID, or application name. When more than one option is entered, the connections must meet all the query criteria.

When the Kill Connections response window displays, select one or more client connections from the list and click on the OK button to kill the selected connections, or the Cancel button to cancel the operation. When the OK button is selected, the response window will close and a dialog box will appear, indicating success or failure.

List Admin Server Config

Lists configuration information for the Admin Server.

Command Path: <Admin Server> => Right-Click Menu => KM Commands => List Admin
                  Server Config

Type: Menu Command

Version: 7.x

Executing the **List Admin Server Config** command creates the following report in a task window:

```
          Admin Server Configuration

    Node type = Database Server with local and remote clients

Database manager configuration release level          = 0x0900

Diagnostic error capture level               (DIAGLEVEL) = 3
Notify Level                                (NOTIFYLEVEL) = 2
Diagnostic data directory path                (DIAGPATH) =

SYSADM group name                          (SYSADM_GROUP) =
SYSCTRL group name                        (SYSCTRL_GROUP) =
SYSMAINT group name                      (SYSMAINT_GROUP) =

Database manager authentication          (AUTHENTICATION) = SERVER
Cataloging allowed without authority     (CATALOG_NOAUTH) = NO
Trust all clients                        (TRUST_ALLCLNTS) = YES
Trusted client authentication            (TRUST_CLNTAUTH) = CLIENT

Agent stack size                         (AGENT_STACK_SZ) = 16
Query heap size (4KB)                      (QUERY_HEAP_SZ) = 250
NetBIOS Workstation name                          (NNAME) = N01BF0B1

TCP/IP Service name                            (SVCENAME) = 523
APPC Transaction program name                   (TPNAME) =
IPX/SPX File server name                     (FILESERVER) = *
IPX/SPX DB2 server object name               (OBJECTNAME) = *
IPX/SPX Socket number                        (IPX_SOCKET) = 87A2

Discovery mode                                 (DISCOVER) = SEARCH
Discovery communication protocols         (DISCOVER_COMM) = NETBIOS,TCPIP
```

List Connections

Lists all connections to the DB2 Connect instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                 Connections => List Connections

Type: Menu Command

Version: All

Executing the **List Connections** command creates a report similar to the following in a task window:

```
Client    DB2                            Application
Login ID  Auth ID   Application Name     Handle      Application Status
--------  --------- -------------------- ----------- -------------------------
jsmith    JSMITH    db2bp                177         waiting for request
bdavis    MYLOGIN   msaccess.exe         246         waiting for request
```

List Databases

Lists all DB2 Connect databases for this instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Report Configuration
                 => List Databases

Type: Menu Command

Version: All

Executing the **List Databases** command creates a report similar to the following in a task window:

```
Database alias    Database name    Node name       Directory entry type Authentication
----------------------------------------------------------------------------------------
DB1ALIAS          DCSDB1           TCPNODE1        Remote               DCS
DB2ALIAS          DCSDB1           TCPNODE1        Remote               DCS
MVSLOOP           DB1ALIAS         LOOPBACK        Remote               DCS
```

List DCS Databases

Returns a list of all DCS directories for this DB2 Connect instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Report Configuration
                  => List DCS Databases

Type: Menu Command

Version: All

Executing the **List DCS Databases** command creates a report similar to the following in a task window:

Figure 12   The List DCS Databases report displayed in its task window

List Instance DBM Config

Lists configuration information for this DB2 Connect instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Report Configuration
                 => List Instance DBM Config

Type: Menu Command

Version: All

Executing the **List Instance DBM Config** command creates a report similar to the following in a task window:

```
        Database Manager Configuration

    Node type = Database Server with local and remote clients

Database manager configuration release level          = 0x0900

Maximum total of files open               (MAXTOTFILOP) = 16000
CPU speed (millisec/instruction)            (CPUSPEED) = 1.157243e-006

Max number of concurrently active databases    (NUMDB) = 8
Data Links support                         (DATALINKS) = NO
Federated Database System Support          (FEDERATED) = NO
Transaction processor monitor name       (TP_MON_NAME) =

Default charge-back account           (DFT_ACCOUNT_STR) =

Java Development Kit 1.1 installation path (JDK11_PATH) =

Diagnostic error capture level             (DIAGLEVEL) = 3
Notify Level                             (NOTIFYLEVEL) = 2
Diagnostic data directory path              (DIAGPATH) =

Default database monitor switches
  Buffer pool                         (DFT_MON_BUFPOOL) = OFF
  Lock                                   (DFT_MON_LOCK) = OFF
  Sort                                   (DFT_MON_SORT) = OFF
  Statement                              (DFT_MON_STMT) = OFF
  Table                                 (DFT_MON_TABLE) = OFF
  Unit of work                            (DFT_MON_UOW) = OFF

SYSADM group name                       (SYSADM_GROUP) =
SYSCTRL group name                     (SYSCTRL_GROUP) =
SYSMAINT group name                   (SYSMAINT_GROUP) =

Database manager authentication       (AUTHENTICATION) = SERVER
Cataloging allowed without authority  (CATALOG_NOAUTH) = NO
Trust all clients                     (TRUST_ALLCLNTS) = YES
Trusted client authentication         (TRUST_CLNTAUTH) = CLIENT

Default database path                        (DFTDBPATH) = D:

Database monitor heap size (4KB)           (MON_HEAP_SZ) = 32
UDF shared memory set size (4KB)           (UDF_MEM_SZ) = 256
Java Virtual Machine heap size (4KB)     (JAVA_HEAP_SZ) = 512
Audit buffer size (4KB)                   (AUDIT_BUF_SZ) = 0

Backup buffer default size (4KB)           (BACKBUFSZ) = 1024
Restore buffer default size (4KB)          (RESTBUFSZ) = 1024

Agent stack size                       (AGENT_STACK_SZ) = 16
Minimum committed private memory (4KB)   (MIN_PRIV_MEM) = 32
Private memory threshold (4KB)        (PRIV_MEM_THRESH) = 1296

Sort heap threshold (4KB)                  (SHEAPTHRES) = 10000

Directory cache support                      (DIR_CACHE) = YES
```

```
Application support layer heap size (4KB)   (ASLHEAPSZ) = 15
Max requester I/O block size (bytes)         (RQRIOBLK) = 32767
DOS requester I/O block size (bytes)     (DOS_RQRIOBLK) = 4096
Query heap size (4KB)                     (QUERY_HEAP_SZ) = 1000
DRDA services heap size (4KB)               (DRDA_HEAP_SZ) = 128

Priority of agents                           (AGENTPRI) = SYSTEM
Max number of existing agents               (MAXAGENTS) = 200
Agent pool size                          (NUM_POOLAGENTS) = 4 (calculated)
Initial number of agents in pool       (NUM_INITAGENTS) = 0
Max number of coordinating agents    (MAX_COORDAGENTS) = MAXAGENTS
Max no. of concurrent coordinating agents  (MAXCAGENTS) = MAX_COORDAGENTS

Keep DARI process                            (KEEPDARI) = YES
Max number of DARI processes                  (MAXDARI) = MAX_COORDAGENTS
Initialize DARI process with JVM        (INITDARI_JVM) = NO
Initial number of fenced DARI process   (NUM_INITDARIS) = 0

Index re-creation time                       (INDEXREC) = ACCESS

Transaction manager database name         (TM_DATABASE) = 1ST_CONN
Transaction resync interval (sec)     (RESYNC_INTERVAL) = 180

SPM name                                      (SPM_NAME) = LOCHSIDE
SPM log size                          (SPM_LOG_FILE_SZ) = 256
SPM resync agent limit                 (SPM_MAX_RESYNC) = 20
SPM log path                            (SPM_LOG_PATH) =

NetBIOS Workstation name                         (NNAME) = N00BF0B1

TCP/IP Service name                          (SVCENAME) = db2cDB2
APPC Transaction program name                  (TPNAME) =
IPX/SPX File server name                   (FILESERVER) = *
IPX/SPX DB2 server object name             (OBJECTNAME) = *
IPX/SPX Socket number                      (IPX_SOCKET) = 879E

Discovery mode                               (DISCOVER) = SEARCH
Discovery communication protocols       (DISCOVER_COMM) = TCPIP
Discover server instance                (DISCOVER_INST) = ENABLE

Directory services type                      (DIR_TYPE) = NONE
Directory path name                     (DIR_PATH_NAME) = /.:/subsys/database/
Directory object name                    (DIR_OBJ_NAME) =
Routing information object name        (ROUTE_OBJ_NAME) =
Default client comm. protocols         (DFT_CLIENT_COMM) =
Default client adapter number          (DFT_CLIENT_ADPT) = 0

Maximum query degree of parallelism    (MAX_QUERYDEGREE) = ANY
Enable intra-partition parallelism      (INTRA_PARALLEL) = NO

No. of int. communication buffers(4KB)(FCM_NUM_BUFFERS) = 1024
Number of FCM request blocks                (FCM_NUM_RQB) = 512
Number of FCM connection entries        (FCM_NUM_CONNECT) = (FCM_NUM_RQB * 0.75)
Number of FCM message anchors           (FCM_NUM_ANCHORS) = (FCM_NUM_RQB * 0.75)
```

List Nodes

Returns a list of all nodes for this DB2 Connect instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Report Configuration
                  => List Nodes

Type: Menu Command

Version: All

Executing the **List Nodes** command creates a report similar to the following in a task window:

```
Node name       Comment                         Protocol    Hostname      Service name
--------------------------------------------------------------------------------------
LOOPBACK                                        TCPIP       bowmore       db2cdb2inst1
TCPNODE1        TCPIP Node 1 for Inst 1         TCPIP       p390          446
TCPNT                                           TCPIP       laphroaig     50000
```

Monitor Connections

Monitors the status of an active client connection.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => Connections =>
                 Monitor Connections

Type: Menu Command

Version: All

Executing the **Monitor Connections** command brings up a response window similar to the
following:
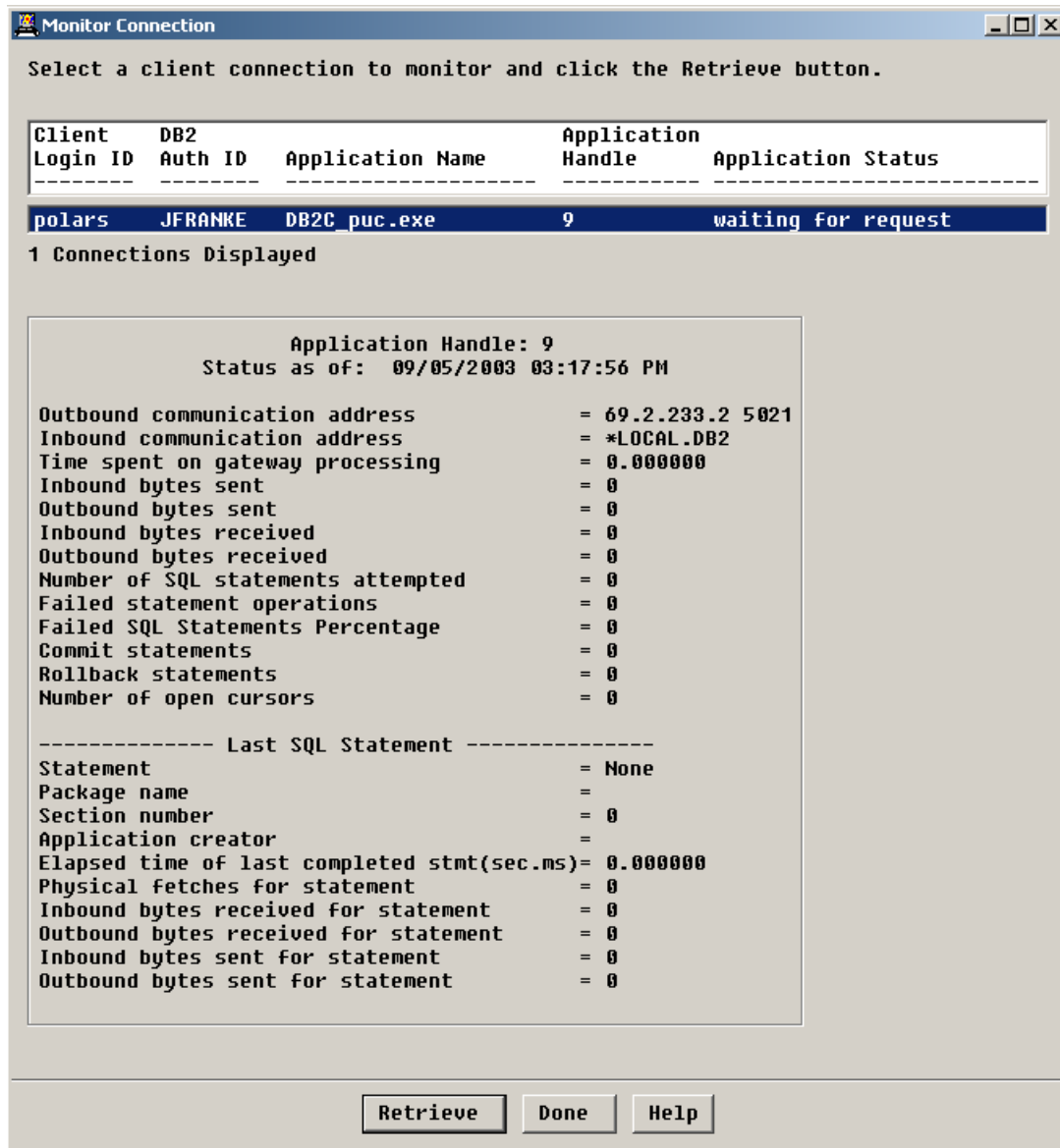
Figure 13   Dialog box from the Monitor Connections menu command

The window displays a list of up to 200 client connections, sorted by client login. If there are more than 200 connections, a response window will first display prompting for query criteria to filter the list. The client connection list can be filtered by client login, DB2 authorization ID, or application name. When more than one option is entered, the connections must meet all the query criteria.

When the monitoring response window displays, select a client connection from the list and click on the Retrieve button. The status information for the selected connection will display in the bottom of the response window. The data can be refreshed by clicking on the Retrieve button again. When finished, click on the Done button to close the window.

NOTE: Information pertaining to the last SQL statement is provided for monitored connections when the DB2 Connect instance is Version 8.1 or greater and the STATEMENT monitor switch is ON (either at the session or instance level).

Prevent Monitor Reset

Starts up a persistent database connection on the agent machine.

The KM monitors each database using DB2 Connect snapshot monitoring. Many of the data elements in the snapshot are cumulative values, from which the KM calculates the delta, or change, from one snapshot to the next. The delta values are then used to populate various KM parameters. There are three scenarios in which the snapshot's cumulative values will be reset, causing the loss of data collected after the last snapshot recorded by the KM up to the point of reset. The snapshot values are only reset when the instance is restarted, the monitors are reset using the RESET command, or there are no connections to the database.   The first two circumstances typically occur due to action by an administrator, and can therefore be readily identified and explained in the KM parameter graphs.   The third circumstance is usually inadvertent, and is a situation that often comes up in testing or sandbox conditions.

This feature is designed to minimize the chances of this third type of cumulative data reset by maintaining a database connection. While this connection is open, and neither of the other two scenarios occur, the cumulative data will not be reset. The database connection is run through PATROL so it will be terminated if the agent is stopped. If the agent is stopped while no other users are connected, the cumulative data elements will be reset.

NOTE: Executing Kill All Connections, or Kill Connections and selecting all connections, or using some other means to kill all connections to the database will result in a reset of the cumulative data, even if Prevent Monitor Reset is enabled. In this case, the KM assumes that the immediate order to kill all connections overrules the desire to prevent the reset of cumulative data.

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Administration => Prevent Monitor Reset

Type: Menu Command

Version: All

Executing the **Prevent Monitor Reset** command brings up a response window with the following fields:

Field Label	Description
Host User ID	User ID used to connect to the host database.
Password	Password for the specified user ID.
Enable/Disable	Radio buttons indicating whether to prevent reset of monitor data. Disabled by default. If enabled, the GlobalCollector will verify the connection is open each time it runs.

Prevent Monitor Reset is disabled by default. Enter a user ID and password, set the flag to the desired setting, and then click **Save** to effect the changes. Clicking **Cancel** will close the dialog without taking any action.

Refresh Parameters

Refreshes all parameters in the DB2C KM.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => Refresh Parameters

Type: Menu Command

Version: All

Executing the **Refresh Parameters** command immediately attempts to refresh all DB2C KM parameters. Errors are noted in the system output window. Success will be evident by the new data point in the historical data for all parameters.

Report Uptime

Reports the time that each instance and database are available. The times are based on samples taken by the collector to test InstanceStatus and ConnectionStatus. ConnectionStatus (refer to Connection Status Config) must be enabled for each database in order to report availability. Since availability can only be determined when the agent is running, the report is reset if the agent is restarted.

Command Path: Instance Monitoring => Right-Click Menu => KM Commands => Report
                   Uptime

Type: Menu Command

Version: All

Executing the **Report Uptime** command brings up the following response window:

Figure 14   Report Uptime Response Window

The first line in Figure 27, "Uptime Samples Since: 09/28/2000 03:48 PM", indicates when the agent was last started. The default time range for the report is the agent start date/time to the current date/time. The sampling interval is the interval period of the GlobalCollector. Figure 27 reports that four samples were taken and the instance, db2inst2, and the database, ALIASDB2, were available each time. Availablity information can be retrieved for different time intervals by modifying the Start Date/Time and/or the End Date/Time and clicking on the Refresh button.

Reset Admin Server Config

Resets the configuration settings of the DB2 Connect Admin Server to system defaults.

Command Path: <Admin Server> => Right-Click Menu => KM Commands => Reset Admin
                  Server Config

Type: Menu Command

Version: 7.x

Executing the **Reset Admin Server Config** command brings up a confirmation dialog box. Clicking **Cancel** will close the dialog without taking any action. Clicking **OK** will proceed, displaying a dialog box indicating success or failure.

Reset Instance DBM Config

Resets the Database Manager configuration settings of the instance to system defaults.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                  => Configure Instance DBM =>
                  Reset Instance DBM Config

Type: Menu Command

Version: All

Executing the **Reset Instance DBM Config** command brings up a confirmation dialog box. Clicking **Cancel** will close the dialog without taking any action. Clicking **OK** will proceed, displaying a dialog box indicating success or failure.

Set Blackout Periods

Allows the user to set alarm blackout periods for the DB2 Connect instance. During a blackout period, PATROL parameters and applications will not reflect state changes, and as a result, alarm events won't occur and recovery actions will not be executed.

Use this command to eliminate alarm events during regularly scheduled maintenance periods.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration => Set Blackout Periods

Type: Menu Command

Version: All

Executing the **Set Blackout Periods** command brings up the following response window:
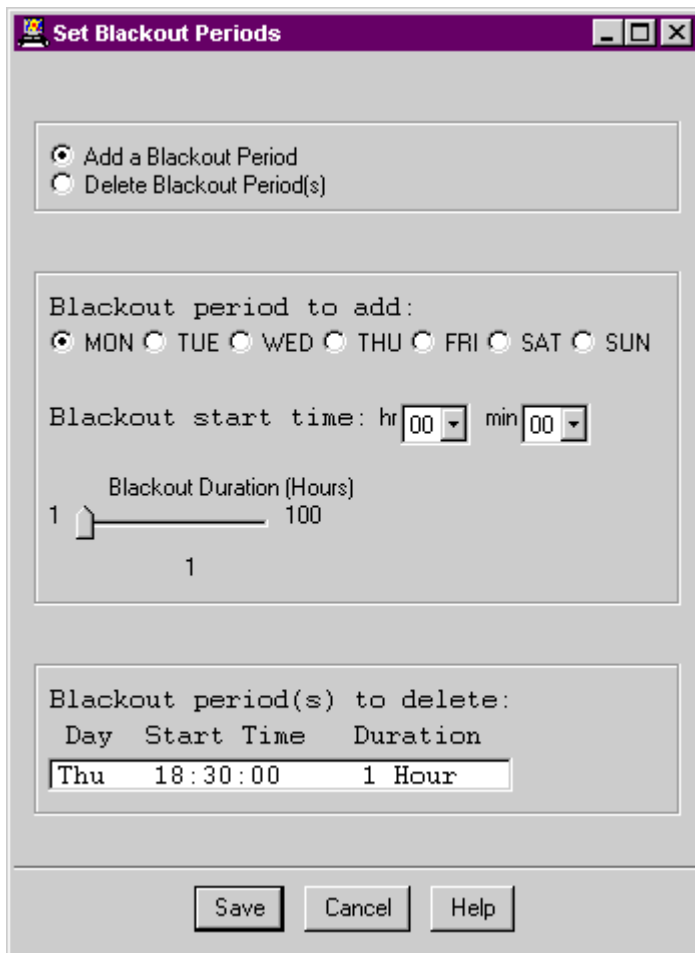
Figure 15   The Set Blackout Periods response window

The response window's fields are described below:

Field Label	Description
Add a Blackout Period / Delete Blackout Period(s)	Indicates whether the window will be used to add or delete blackout periods.
Blackout period to add	Day of the week to add a blackout period.
Blackout start time	Start time of the new blackout period.
Blackout Duration (Hours)	Duration of the blackout period, in hours. Defaults to 1 hour.
Blackout period(s) to delete	A multi-select list of current blackout periods for this instance. Each blackout period has a day of the week, a start time, and a duration for the blackout. User may select one or more blackout periods to delete.

Clicking **Cancel** will close the response window without taking any action.

If the "Add a Blackout Period" radio button is selected, the user must select a day of the week, start time, and duration for the new blackout period. Clicking **OK** will attempt to add the blackout period, displaying a dialog box indicating success or failure.

If the "Delete Blackout Period(s)" radio button is selected, the user must select at least one existing blackout period from the list. Clicking **OK** will attempt to delete the selected blackout period or periods, displaying a dialog box indicating success or failure.

NOTE: Please be aware that setting a blackout period only prevents the instance from changing state during that time. It does not prevent the instance from collecting data. Thus, during the blackout period, some out-of-range data may be collected for a parameter (such as a status going from indicating "Up" to "Down" as the DB2 Connect is shut down during the blackout period). It won't trigger an alarm, but it will appear on historical data reports.

Set Debug

Allows the user to turn debugging on or off for menus, parameters, and discovery. This feature can be used by a qualified technician to troubleshoot problems in the DB2 Connect configuration or the DB2C KM configuration.

Using this feature will produce a significant number of output messages that are not publicly documented. This feature should only be used when instructed to do so by ESI Software Technical Support.

Command Path: DB2 Connect => Right-Click Menu => KM Commands => Set Debug

Type: Menu Command

Version: All

Executing the **Set Debug** command displays a response window with the following fields:

Field Label	Description
DEBUG Menus (on/off)	Turns debugging of menu commands on or off. There is no option to debug individual menu commands – you must either debug all or none.
DEBUG Parameters (on/off)	Turns parameter collection debugging on or off. There is no option to debug individual parameters – you must either debug all or none. However, by disabling parameters you are not interested in (via the Global Collector Config or the various configuration menu commands), you can eliminate much of the excess debugging information.
DEBUG Discovery (on/off)	Turns debugging of the discovery process on or off.

All debugging parameters are disabled by default. Set the flags to the desired settings, then click "Save" to effect the changes. Clicking "Cancel" will close the dialog without taking any action.

SQL Response Config

Allows the user to enable or disable the collection of the SQLResponse parameters (SQLResponseConnectTime, SQLResponseExecuteTime, and SQLResponseTotalTime).

Command Path: <Database Alias> => Right-Click Menu => KM Commands => Performance
                 => SQL Response Config

Type: Menu Command

Version: All

Executing the **SQL Response Config** command displays a response window with the following fields:

Field Label	Description
Host User ID	User ID used to connect to the host database.
Password	Password for the specified user ID.
SQL Statement	An SQL statement to run against the host database for response timing purposes. Each time the GlobalCollector is run, this statement is executed against the database and the resulting timing information is stored in SQLResponseConnectTime, SQLResponseExecuteTime, and SQLResponseTotalTime. There is no default value for this field.
Enable/Disable	Indicates whether the SQLResponse parameters will be collected by the GlobalCollector. Disabled by default.

Collection of the SQLResponse parameters is disabled by default. Enter a user ID and password, a valid SQL statement, set the flag to the desired setting, then click **Save** to effect the changes. Clicking **Cancel** will close the dialog without taking any action.

See *How to Set Up SQL Response Monitoring* for more information about this topic.

Start Admin Server

Starts the DB2 Connect Admin Server.

Command Path: <Admin Server> => Right-Click Menu => KM Commands => Start Admin
                 Server

Type: Menu Command

Version: 7.x

Executing the **Start Admin Server** command displays a dialog box indicating success or failure.

Start Instance

Starts the DB2 Connect Instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                  Start Instance

Type: Menu Command

Version: All

Executing the **Start Instance** command displays a dialog box indicating success or failure.

Start/Stop Tracing

Starts or stops DRDA Application Requestor Trace.

NOTE: Only the **ddcstrc** tracing utility is used by the DB2C KM.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                  Start/Stop Tracing

Type: Menu Command

Version: All

Executing the **Start/Stop Tracing** command brings up a response window with the following fields:

Field Label	Description
Enable Tracing	Controls whether tracing is on or off.
Include Timestamps	Choose "Yes" to include timestamps in the trace file. Default is "No".
Buffer Size (Bytes)	The size, in bytes, of the buffer used to store trace information. The default value is 1,000,000, and the minimum is 65,536.
Trace File Name	Specifies the destination for the trace; it may be the name of a file or a standard device. If a file name is specified without a complete path, the current path for DB2 Connect is used for the missing parts. The default file name is `ddcstrc.dmp`
Process ID	If set, this field causes the trace utility to trace only events for the process identified by the process ID. If it is not set (i.e., NULL), all processes for the user's instance are written to the trace file.

The user may choose to turn tracing on or off by selecting the either the "On" or "Off" radio button. If turning tracing on, the user may then choose to include or not include timestamps, set the trace buffer size, specify the trace file name, and specify, if desired, a specific process ID to trace. Once all settings have been properly modified, the user may click **OK** to put the new settings into effect, either turning tracing on or off. Clicking **Cancel** causes all changes to be discarded and the response window is dismissed.

Stop Admin Server

Stops the DB2 Connect Admin Server.

Command Path: <Admin Server> => Right-Click Menu => KM Commands => Stop Admin
                  Server

Type: Menu Command

Version: 7.x

Executing the **Stop Admin Server** command displays a dialog box indicating success or failure.

Stop Instance

Stops the DB2 Connect Instance.

Command Path: <Instance> => Right-Click Menu => KM Commands => Administration =>
                  Stop Instance

Type: Menu Command

Version: All

Executing the **Stop Instance** command brings up a dialog box asking whether to disconnect all applications before trying to stop. The user may cancel the operation by clicking **Cancel**, or proceed by clicking **OK**. If the Disconnect checkbox is not checked and databases are still active, the instance will not be stopped. In any case, a second dialog will appear, indicating success or failure.

Uncatalog Database

Allows the user to delete a database entry from the system database directory.

Only entries in the system database directory can be uncataloged. Entries in the local database directory can be deleted by dropping the database from the DB2 Command Line Processor.

To recatalog the database, use the Catalog Database command.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                => Uncatalog => Uncatalog Database

Type: Menu Command

Version: All

Executing the **Uncatalog Database** command brings up a response window with the following field:

Field Label	Description
Select Database:	Drop-down selector listing all databases for the current instance. The selected database is the one to be removed. Only one database can be selected.

The user must select a database to delete. Clicking **Cancel** closes the window without taking any action. Clicking **OK** attempts to delete the selected database, then displays a dialog box indicating success or failure.

Please see the DB2 Connect Documentation for more information on uncataloging databases.

Uncatalog DCS Database

Allows the user to delete an entry from the Database Connection Services (DCS) directory.

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                => Uncatalog => Uncatalog DCS Database

Type: Menu Command

Version: All

Executing the **Uncatalog DCS Database** command brings up a response window with the following field:

Field Label	Description
Select DCS Database:	Drop-down selector listing all DCS databases for the current instance. The selected DCS database is the one to be removed. Only one DCS database can be selected.

The user must select a DCS database to delete. Clicking **Cancel** closes the window without taking any action. Clicking **OK** attempts to delete the selected DCS database, then displays a dialog box indicating success or failure.

Please see the DB2 Connect Documentation for more information on uncataloging DCS databases.

Uncatalog Node

Allows the user to delete an entry from the node directory.

This command can be executed on any type of node, but only the local directory is affected, even if there is an attachment to a remote instance, or a different local instance.

Command Path: \<Instance> => Right-Click Menu => KM Commands => Update Configuration
                 => Uncatalog => Uncatalog Node

Type: Menu Command

Version: All

Executing the **Uncatalog Node** command brings up a response window with the following field:

Field Label	Description
Select Node:	Drop-down selector listing all nodes for the current instance. The selected node is the one to be removed. Only one node can be selected.

The user must select a node to delete. Clicking **Cancel** closes the window without taking any action. Clicking **OK** attempts to delete the node, then displays a dialog box indicating success or failure.

Please see the DB2 Connect Documentation for more information on uncataloging nodes.

Where to Go from Here

The following table summarizes where to look for more information on using PATROL and the DB2C KM.

If you want information on...	See...
What a certain parameter does	*Chapter 4: Parameter Summary*, and the DB2C KM online help.
How to perform a task using this KM	*Chapter 5: Using the KM*

Chapter 4: Parameter Summary

This chapter provides descriptions of the DB2C KM parameters. The DB2C KM contains a number of PATROL parameters that provide statistical information about resources, operating status, and performance.

This chapter is divided into sections, one for each parameter. The parameter name is displayed in bold as the section heading, with a brief description of the parameter beneath it. Under the description are a list of its properties, such as whether the parameter is active or inactive, whether an alarm or border range has been set, and the time interval in the polling cycle. These are explained below.

Version 2.00 of the KM includes the addition of several new instance and database parameters. The values for the database parameters are collected from the output of the 'GET SNAPSHOT' CLP command. Many of the values are stored in the DB2 Connect registry and are cumulative. In other words, the value increments indefinitely from the time the DB2 instance is started and at least one database connection exists.   The KM must calculate the delta between two collection intervals in order to display an accurate value for the interval. Therefore the collector must execute two times before a value is displayed. When the KM is initially loaded by the agent, two collector cycles will take approximately 10 minutes. Additionally, if the DB2 Connect registry values are reset (either by restarting the instance, explicitly resetting the data elements, or when there are no active connections to the database), the collector will skip an interval until it can calculate the delta during the next interval. When this scenario occurs, there will be gaps in the data points displayed on the parameter graph.

For ease of reference, the parameters are listed in alphabetical order.

Property Definitions

Knowledge Module   The knowledge module this parameter belongs to.

Version: Specifies the version or versions of DB2 Connect for which this parameter is included. Notes will indicate if there are differences between versions.

Menu Command: The menu command (or commands) that display this parameter's value, or enable collection of this parameter.

Active: Whether the parameter is active or inactive when discovered.

Type: Specifies whether the parameter is a consumer or collector.

Default Warning: Specifies thresholds for the first-level alarm, which represents either a warning or an alarm state.   This information is not

applicable to collectors. If a parameter alarm range has not been set, it is denoted by Undefined in the table.

Default Alarm: Specifies thresholds for the second-level alarm, which represents either a warning or an alarm state. This information is not applicable to collectors. If a parameter alarm range has not been set, it is denoted by Undefined in the table.

Border: If it is possible for the parameter to return a value outside of the Alarm 1 range or the Alarm 2 range, specifies thresholds for a border range of values. The border range is used either as information or as a third-level alarm that represents either a warning or an alarm state. This information is not applicable to collectors. If a parameter border range has not been set, it is denoted by Undefined in the table.

Scheduling: Specifies the time interval in the polling cycle. Consumer parameters refer to the collector that gathers their data values.

Icon: If the parameter has output, specifies whether the icon represents a graph, gauge, text, Boolean, or stoplight.

Units: Specifies the type of unit in which the parameter output is expressed, such as percentage, number, or bytes.

For information about the different types of parameters and their functions, refer to the *PATROL User Guide* for your Console.

KM Defaults

The KM provides default settings for monitoring a DB2 Connect server, its instances and databases. The KM also provides defaults for parameter property definition.

When you configure a DB2 Connect for monitoring, the default is monitor all DB2 Connect instances and databases. You can change this value at any time to include only those instances and databases that you want to monitor.

Parameters that require special configuration such as SQLResponseTotalTime are not enabled at installation. These parameters must be configured and enabled to begin gathering information.

All parameter data is collected by the KM's sole collector, GlobalCollector, which is set to sample data for all consumer parameters once every 5 minutes. All parameters have been configured to store history for a period of 7 days. The sampling period and the history retention period can be modified via the Developer Console.

AdminServerStatus

Indicates whether the DB2 Connect Admin Server is running.

Knowledge Module: <Admin Server>
Version: 7.x
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: 0 (not available)
Border: N/A
Scheduling: see GlobalCollector
Icon: Stoplight
Units: N/A

AgentsAssignedFromPool

The number of agents assigned from the agent pool.

Knowledge Module: Instance Monitoring
Version: All
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: see GlobalCollector
Icon: Graph
Units: # of Agents

AgentsCreatedFromPool

The number of agents created because the agent pool was empty.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Agents

AgentsRegistered

The number of coordinator agents and subagents registered in the monitored instance.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Agents

AgentsWaitingForToken

The number of agents waiting for a token to execute a transaction.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Agents

AgentUsageRatio

Indicates how often an agent must be created because the pool is empty. The value can be used to tune the **num_poolagents** configuration parameter.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Ratio: AgentsCreatedFromPool / AgentsAssignedFromPool (granularity to the thousandths)

AttemptedCommitStatements

The number of SQL commit statements attempted since the last collection interval.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Statements

AttemptedRollbackStatements

The number of SQL rollback statements attempted since the last collection interval.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Statements

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AttemptedSQLStatements

The number of SQL statements that have been attempted since the last collection interval.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Statements

ClientSQLResponseConnectTime

The time taken to connect to a host database from a client machine prior to executing a SQL statement against it. This parameter measures only the amount of time, in seconds, that elapses during the connection process. ClientSQLResponseExecuteTime measures the time that elapses during execution of the statement, and ClientSQLResponseTotalTime is the sum of both time values.

The Client SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also ClientSQLResponseExecuteTime, ClientSQLResponseTotalTime, Client SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

ClientSQLResponseExecuteTime

The time taken to execute a SQL statement against a host database from a client machine. This parameter measures only the amount of time, in seconds, that elapses during the execution of the statement. ClientSQLResponseConnectTime measures the time that elapses during connection to the database, and ClientSQLResponseTotalTime is the sum of both time values.

The Client SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also ClientSQLResponseConnectTime, ClientSQLResponseTotalTime, Client SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

ClientSQLResponseTotalTime

The total time taken to connect to a host database from a client machine and then execute a SQL statement against it. This parameter is the sum of ClientSQLResponseConnectTime and ClientSQLResponseExecuteTime.

The Client SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also ClientSQLResponseConnectTime, ClientSQLResponseExecuteTime, Client SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

CommunicationErrors

The total number of communication errors occurring while a DCS application was attempting to connect to a host database, or while it was processing an SQL statement, in the last data collection period (the time between the previous and current executions of GlobalCollector).

WARNING	This parameter may under-report the number of communication errors during a collection period if any of the following occurs: a) the instance is stopped and re-started, or b) the number of current connections to the instance drops to zero. In these cases, the internal DB2 Connect communication error counter (upon which the CommunicationErrors parameter is based) is reset. Thus, from one snapshot to the next, the counter was reset to zero, and the DB2C KM has no way of knowing the value prior to the reset, or even if there were multiple resets!

Knowledge Module: <Database Alias>
Version: All
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: see GlobalCollector
Icon: Graph
Units: Number

ConcentratorUsage

Indicates the percentage of associated connections to total connections based on the 'work agent association status'. The parameter value will be set to 0 unless the MAX_LOGICAGENTS configuration value for DB2 Connect is greater than the MAXAGENTS configuration value. Both of these values can be set in the Patrol Console via the following menu command:

Command Path: <Instance> => Right-Click Menu => KM Commands => Update Configuration
                 => Configure Instance DBM => Configure Applications

The following information is provided in the data point annotation: 'total number of connections', 'number of applications associated with agents', and 'number of applications not associated with agents'.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Percent

ConnectionStatus

Indicates whether a connection can be made to the database. If so, ConnectionStatus is set to 1. Otherwise, ConnectionStatus is set to 0. Collection of this consumer parameter can be enabled or disabled via the Connection Status Config menu command.

The DB2 Connect configuration may affect this parameter. The DB2C KM must reside on the same physical machine as the DB2 Connect Server. Consequently, client connections, by default, do not run within an agent process. The purpose of the Connection Status parameter is to test whether a connection to the host database can be established. If the connection is established using an agent process, an alarm condition would result from a problem on the mainframe, a network problem, or a problem with the agent process. If the connection is made directly (without using an agent process), an alarm condition could not be caused by the agent process.

In order for local client connections to use an agent process, the DB2 Connect configuration must be altered. The DB2 registry variable, DB2CONNECT_IN_APP_PROCESS, must be set to "NO". Please bear in mind that this setting will impact **all** other local clients, and will also affect the SQLResponseConnectTime, SQLResponseExecuteTime, and SQLResponseTotalTime parameters (see the *How to Set Up SQL Response Monitoring* section for more details).

See also Connection Status Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	Connection Status Config
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	0 (not available)
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Stoplight
Units:	N/A

ConnectionsWaitingforClient

Current number of DB2 Connect gateway connections waiting for a client to send a request. Stored for each DB2 Connect database and instance.

The value of this parameter can change frequently. Taken individually, discreet sample values may not give a realistic view of gateway usage. Review the graph over an extended period to get an accurate view of gateway traffic.

See also ConnectionsWaitingforHost, CurrentConnections.

Knowledge Module:	Instance Monitoring, <Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Number

ConnectionsWaitingforHost

Current number of DB2 Connect gateway connections waiting for a reply from the host. Stored for each DB2 Connect database and instance.

The value of this parameter can change frequently. Taken individually, discreet sample values may not give a realistic view of gateway usage. Review the graph over an extended period to get an accurate view of gateway traffic.

See also ConnectionsWaitingforClient, CurrentConnections.

Knowledge Module:	Instance Monitoring, <Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Number

CurrentConnections

Current number of connections to the host database being handled by the DB2 Connect gateway. Stored for each DB2 Connect database and instance.

See also ConnectionsWaitingforClient, ConnectionsWaitingforHost.

Knowledge Module:	Instance Monitoring, <Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Number

DB2CONNECT_IN_APP_PROCESS

Indicates the current value of the DB2 Connect registry variable, **DB2CONNECT_IN_APP_PROCESS**. This variable must be set to NO for complete KM monitoring to be functional. When the registry variable value is **not** set to NO, the parameter will be in a WARNING state.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Text
Units:	N/A

ExtraFilesList

This parameter is required by BMC. It does not gather or display data and should not be modified by the user.

Knowledge Module: DB2 Connect
Version: All

Menu Command: N/A
Active: No
Type: Collector
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: N/A
Icon: N/A
Units: N/A

FailedSQLStatements

The number of SQL statements that failed since the last collection interval.

Knowledge Module: <Database Alias>
Version: All
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: see GlobalCollector
Icon: Graph
Units: # of Statements

FailedStatementPercent

The percentage of attempted SQL statements that failed.

Knowledge Module: <Database Alias>
Version: All
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: see GlobalCollector
Icon: Graph
Units: Percentage (to the hundredths)

GlobalCollector

The global collector will gather historical information for all consumer parameters within the DB2C KM. This will be the only collector for the KM.

The consumer parameters served by this global collector are grouped into two logical levels: 1) Instance parameters, and 2) Gateway Connection (Database) parameters. The DB2C KM groups the consumers in this manner to allow the user to enable or disable data collection for each level independent of the other level. Except for the noted parameters, both levels may be enabled or disabled, as desired by the user. This is done from the Global Collector Config menu command.

Level 1 - Instance Parameters:

- AdminServerStatus *
- AgentsAssignedFromPool
- AgentsCreatedFromPool
- AgentsRegistered
- AgentsWaitingForToken
- AgentUsageRatio
- ConnectionsWaitingforClient (Instance)
- ConnectionsWaitingforHost (Instance)
- CurrentConnections (Instance)

- DB2CONNECT_IN_APP_PROCESS
- IdleAgents
- InstanceStatus *
- LocalConnections
- LocalConnectionsExecuting
- MemoryUsage
- RemoteConnections
- RemoteConnectionsExecuting
- StolenAgents

Not disabled when instance parameters are disabled from the Global Collector Config menu command.

Level 2 - Gateway Connection (Database) Parameters:

- AttemptedCommitStatements
- AttemptedRollbackStatements
- AttemptedSQLStatements
- ClientSQLResponseConnectTime
- ClientSQLResponseExecuteTime
- ClientSQLResponseTotalTime
- CommunicationErrors
- ConcentratorUsage
- ConnectionStatus *
- ConnectionsWaitingforClient (Database)
- ConnectionsWaitingforHost (Database)
- CurrentConnections (Database)
- FailedSQLStatements

- FailedStatementPercent
- HostSQLResponseConnectTime *
- HostSQLResponseDB2Time *
- HostSQLResponseRequestTime *
- HostSQLResponseResultTime *
- HostSQLResponseThroughput *
- HostSQLResponseTotalTime *
- OutboundBytesReceived
- OutboundBytesSent
- SQLResponseConnectTime *
- SQLResponseExecuteTime *
- SQLResponseTotalTime *
- SQLStatementThroughput

Not disabled when gateway connection (database) parameters are disabled from the Global Collector Config menu command.

Knowledge Module:	DB2 Connect	Default Alarm:	N/A
Version:	All	Border:	N/A
Menu Command:	N/A	Scheduling:	5 minutes
Active:	Yes	Icon:	N/A
Type:	Collector	Units:	N/A
Default Warning:	N/A		

HostSQLResponseConnectTime

The time taken to connect from a DB2 Connect gateway to the host database prior to executing a SQL statement against it. This parameter measures only the amount of time, in seconds, that elapses during the connection process. HostSQLResponseRequestTime measures the time to send the request, HostSQLResponseDB2Time measures the time that elapses in DB2 during the execution of the statement, and HostSQLResponseResultTime measures the time to get the results back from the mainframe.

The Host SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also HostSQLResponseRequestTime, HostSQLResponseDB2Time, HostSQLResponseResultTime, HostSQLResponseTotalTime, HostSQLResponseThroughput, Host SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

HostSQLResponseDB2Time

The time taken to execute a SQL statement on the host database. This parameter measures only the amount of time, in seconds, that elapses in DB2 during the execution of the statement. HostSQLResponseConnectTime measures the connection time, HostSQLResponseRequestTime measures the time to send the request, and HostSQLResponseResultTime measures the time to get the results back from the mainframe.

The Host SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also HostSQLResponseConnectTime, HostSQLResponseRequestTime, HostSQLResponseResultTime, HostSQLResponseTotalTime, HostSQLResponseThroughput, Host SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

HostSQLResponseRequestTime

The time taken to send a request to the host database. This parameter measures the amount of time, in seconds, that elapses from the point when a connection to DB2 Connect has been established until the host database begins execution of the SQL statement passed in with the request. HostSQLResponseConnectTime measures the connection time, HostSQLResponseDB2Time measures the time that elapses in DB2 during the execution of the statement, and HostSQLResponseResultTime measures the time to get the results back from the mainframe.

The Host SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also HostSQLResponseConnectTime, HostSQLResponseDB2Time, HostSQLResponseResultTime, HostSQLResponseTotalTime, HostSQLResponseThroughput, Host SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

HostSQLResponseResultTime

The time taken to retrieve the results from the execution of the SQL statement on the host database. This parameter measures only the amount of time, in seconds, that elapses during result set retrieval. HostSQLResponseConnectTime measures the connection time, HostSQLResponseRequestTime measures the time to send the request, and HostSQLResponseDB2Time measures the time that elapses in DB2 during the execution of the statement.

The Host SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also HostSQLResponseConnectTime, HostSQLResponseRequestTime, HostSQLResponseDB2Time, HostSQLResponseTotalTime, HostSQLResponseThroughput, Host SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

HostSQLResponseThroughput

The data throughput during result retrieval for the Host SQL Response parameters. It is calculated by dividing the total number of bytes received in the result set by the total time to retrieve results (HostSQLResponseResultTime). This value is measured in bytes per second.

NOTE:	The HostSQLResponseThroughput parameter value calculation only includes the result set data, not all network traffic related to the result set transfer. Thus, the actual number of bytes, and hence, the true throughput, will be greater than is reported in this parameter.

The Host SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also HostSQLResponseConnectTime, HostSQLResponseRequestTime, HostSQLResponseDB2Time, HostSQLResponseResultTime, HostSQLResponseTotalTime, HostSQLResponseThroughput, Host SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Bytes Per Second

HostSQLResponseTotalTime

The total amount of time taken to execute a SQL statement against a host database from a DB2 Connect gateway. This parameter measures the amount of time, in seconds, taken to connect to the DB2 Connect gateway (HostSQLResponseConnectTime), send a request to the host database (HostSQLResponseRequestTime), execute the SQL statement against the host database (HostSQLResponseDB2Time), and retrieve the result set from the mainframe (HostSQLResponseResultTime).

The Host SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also HostSQLResponseConnectTime, Host SQL Response Config.

Knowledge Module:	\<Database Alias\>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	On Demand
Icon:	Graph
Units:	Seconds

IdleAgents

The number of agents currently unassigned to an application.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Agents

InstanceStatus

Indicates whether the DB2 Connect instance is running.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	0 (not available)
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Stoplight
Units:	N/A

LocalConnections

The number of connections from local clients to databases in the monitored instance.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Connections

LocalConnectionsExecuting

The number of connections from local clients connected to a database and currently processing a unit of work.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Connections

MemoryUsage

The amount of memory currently being used by the instance.   This parameter applies only to DB2 Connect version 8.

Knowledge Module:	Instance Monitoring
Version:	8.x
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Kilobytes (KB)

RemoteConnections

The number of connections from remote clients to databases in the monitored instance.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Connections

RemoteConnectionsExecuting

The number of connections from remote clients connected to a database and currently processing a unit of work.

Knowledge Module:	Instance Monitoring
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	# of Connections

StolenAgents

The number of times that agents are stolen from an application.

Knowledge Module: Instance Monitoring
Version: All
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: see GlobalCollector
Icon: Graph
Units: # of Agents

OutboundBytesReceived

The number of bytes received by the gateway from the host.

Knowledge Module: <Database Alias>
Version: All
Menu Command: N/A
Active: Yes
Type: Consumer
Default Warning: N/A
Default Alarm: N/A
Border: N/A
Scheduling: see GlobalCollector
Icon: Graph
Units: Bytes

OutboundBytesSent

The number of bytes sent by the gateway to the host.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Bytes

SQLResponseConnectTime

The time taken to connect to a host database prior to executing a SQL statement against it. This parameter measures only the amount of time, in seconds, that elapses during the connection process. SQLResponseExecuteTime measures the time that elapses during execution of the statement, and SQLResponseTotalTime is the sum of both time values.

The SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also SQLResponseExecuteTime, SQLResponseTotalTime, SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

SQLResponseExecuteTime

The time taken to execute a SQL statement against a host database. This parameter measures only the amount of time, in seconds, that elapses during the execution of the statement. SQLResponseConnectTime measures the time that elapses during connection to the database, and SQLResponseTotalTime is the sum of both time values.

The SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also SQLResponseConnectTime, SQLResponseTotalTime, SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

SQLResponseTotalTime

The total time taken to connect to a host database and then execute a SQL statement against it. This parameter is the sum of SQLResponseConnectTime and SQLResponseExecuteTime.

The SQL Response Config menu command is used to enable collection of this parameter, and to specify the SQL command to be executed.

See also SQLResponseConnectTime, SQLResponseExecuteTime, SQL Response Config.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	Seconds

SQLStatementThroughput

The number of SQL statements executed against the host database over the last collection period, expressed in SQL statements per second. This value is calculated by totaling the number of SQL statements executed against the host database since the last data collection, then dividing by the number of seconds since then.

Knowledge Module:	<Database Alias>
Version:	All
Menu Command:	N/A
Active:	Yes
Type:	Consumer
Default Warning:	N/A
Default Alarm:	N/A
Border:	N/A
Scheduling:	see GlobalCollector
Icon:	Graph
Units:	SQL Statements per Second

Where to Go from Here

The following table summarizes where to look for more information on using PATROL and the DB2C KM.

If you want information on...	See...
How to perform a task using this KM	*Chapter 5: Using the KM*

Chapter 5: Using the KM

This chapter introduces you to basic DB2C KM tasks.

DB2 Connect Icon Status

The table below describes the appearance of the icons for each monitoring status:

Icon	Icon Appearance	Monitoring Status
DB2 Connect	• The DB2 Connect icon's base is either yellow, red or flashing red. • Parameter icon's base is either yellow, red or flashing red.	• The DB2 Connect is being monitored, running, and in a warning or alarm state. • Parameters are being monitored, running, and one or more is in a warning or alarm state. • The DB2 Connect is discovered and is set up to be monitored by PATROL; however, the DB2 Connect server has just been shut down.
DB2 Connect	• The DB2 Connect icon's base is gray. • Parameter icons display the letter "s" in a red circle in the upper right corner.	• The DB2 Connect is in an offline state. • The DB2 Connect is discovered and is set up to be monitored by PATROL; however, the DB2 Connect server has just been shut down. • Parameters are suspended and not running.
DB2 Connect	• The DB2 Connect icon's base is white. • Parameter icon bases are white.	• The DB2 Connect is discovered and monitored by PATROL. • The DB2 Connect is in an OK state. • Parameters are running and are in an OK state.

How to Set Up SQL Response Monitoring

The SQL response time is the amount of time it takes for the DB2 Connect to issue a SQL statement against a host database and receive data back from DB2. The DB2C KM can quickly be configured to monitor SQL response time, as described below.   (Note: SQL Response monitoring requires the JDK that ships with DB2 Connect to be installed on the agent machine.)

Timing Issues

The accuracy of the SQL response times (SQLResponseTotalTime et al.) is directly related to the consistency with which they are collected. Variations in the response times should indicate variations in load on the DB2 Connect or DB2, not in the data collection method.

There are two major potential timing issues to be aware of:

- timing fluctuations due to varying SQL statement result sets

- timing fluctuations due to DB2 Connect configuration changes

If the SQL statement used for response timing does not consistently return exactly the same amount of data every time, the SQL response timing will fluctuate with the size of the result set. When configuring SQL Response timing, make sure the SQL statement used will always return exactly the same amount of data.

The DB2 Connect configuration may also affect the SQL response timing. The DB2C KM must reside on the same physical machine as the DB2 Connect Server. Consequently, client connections, by default, do not run within an agent process. The response times will be shorter, on average, when the connections do not use an agent process than they would be if an agent process were used. As long as the timing value is consistent, it is useful. However, it is more useful if it resulted from a process that functioned as close as possible to the production environment for applications. For example, if DB2 Connect is being used by client/server applications, the SQL Response times will be more meaningful if they are gathered using an agent process.

In order for local client connections to use an agent process, the DB2 Connect configuration must be altered. The DB2 registry variable, DB2CONNECT_IN_APP_PROCESS, must be set to "NO". Please bear in mind that this setting will impact **all** other local clients, and will also affect the ConnectionStatus parameter.

SQL Response Configuration

You can setup SQL response monitoring using a PATROL Operator Console or a PATROL Developer Console.
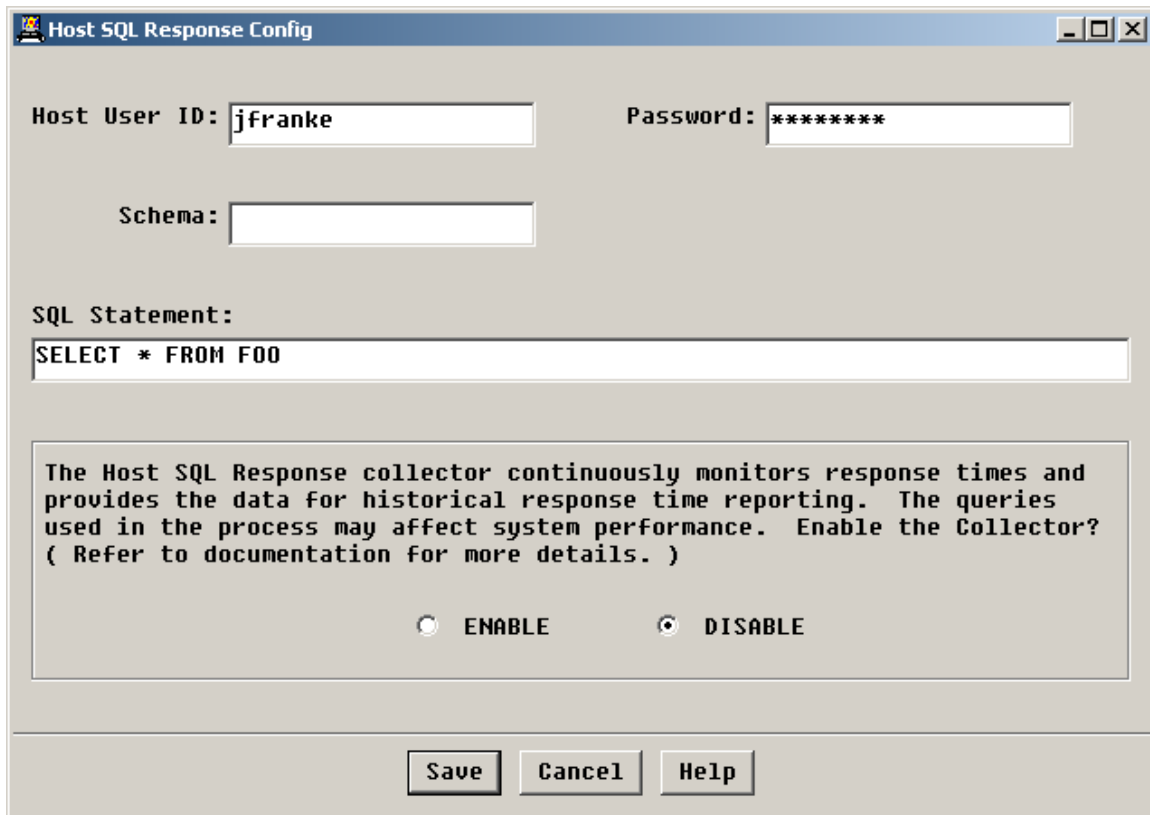
Summary: This section describes how to setup SQL response monitoring for a DB2 Connect using PATROL. This task assumes that you have already performed the following activities:

- properly set the DB2 registry variable DB2CONNECT_IN_APP_PROCESS as discussed above

Step 1.   Choose **Performance => SQL Response Config** from the KM commands on the pop-up menu for the <Database Alias>.

The following dialog box appears:

```
SQL Response Configuration                                               _ □ ×

Host User ID: [                    ]        Password: [                    ]

SQL Statement:
[                                                                        ]


 ┌────────────────────────────────────────────────────────────────────┐
 │ This SQL Response collector continuously monitors response times and │
 │ provides the data for historical response time reporting.  The queries│
 │ used in the process may affect system performance.  Enable the Collector?│
 │ ( Refer to documentation for more details. )                         │
 │                                                                      │
 │                    ○ ENABLE    ⊙ DISABLE                             │
 └────────────────────────────────────────────────────────────────────┘

                        [ Save ]   [ Cancel ]   [ Help ]
```

Figure 16   Configure the SQL response monitoring from this dialog

Step 2.   Enter the host user ID and password for the account that has been granted the proper privileges to execute the SQL statement to be used in the response timing.

Step 3.   Enter the SQL statement to execute against the host database.

Step 4.   Click the Enable radio button to start collecting SQL Response timing information.

Step 5.   Click **OK** to save your changes and begin SQL response monitoring. Click **Cancel** to exit without saving your changes.

How to Set Up Client SQL Response Monitoring

The Client SQL Response time is the amount of time it takes for a remote DB2 Connect client application to issue a SQL statement against a host database through the DB2 Connect server and receive data back from DB2. The DB2C KM can quickly be configured to monitor Client SQL Response time, as described below.

Timing Issues

As with SQL Response timing, there are timing accuracy issues to be aware of when configuring Client SQL Response. Two major potential issues are timing fluctuations due to varying SQL statement result sets, and timing fluctuations due to DB2 Connect configuration changes. Please read the *Timing Issues* section in *How to Set Up SQL* Response Monitoring for detailed information.

Client SQL Response Configuration

You can setup Client SQL Response monitoring using a PATROL Operator Console or a PATROL Developer Console to setup the server portion, and set up the client from a Windows machine.

Summary: This section describes how to set up Client SQL Response monitoring for a DB2 Connect gateway, using PATROL. This task assumes that you have already performed the following activities:

- properly installed the DB2 Connect client software on the Windows client machine

- using the IBM Client Configuration Assistant (or its equivalent), configured a DB2 Connect database alias on the Windows client for the DB2 Connect database to be monitored on the DB2 Connect server machine

- properly set the DB2 registry variable DB2CONNECT_IN_APP_PROCESS as discussed in the *Timing Issues* section of *How to Set Up SQL Response Monitoring*

Step 1. Open a PATROL Console.

Step 2. Locate the DB2 Connect database alias for which you wish to do Client SQL Response monitoring.

Step 3. Choose **Performance => Client SQL Response Config** from the KM commands on the pop-up menu for the <Database Alias>.

The following dialog box appears:

Figure 17   Configure the Client SQL Response monitoring from this dialog

Step 4.   Enter the name of the Windows client machine in the field labeled "Client Host Name."

NOTE: If the client machine has no name, or you do not know its name, you may use another name that is unique among all Client SQL Response clients, and then use the -C flag when running DB2C_sqlResp.exe. See DB2C_sqlResp.exe help for details (DB2C_sqlResp -help).

Step 5.   Enter the name of the DB2 Connect database alias for the current database on the client machine in the field labeled "Client Database Alias." This name will default to the name of the database alias on the server.

Step 6.   Enter the host user ID and password for the account that has been granted the proper privileges to execute the SQL statement to be used in the response timing.

Step 7.   Enter the SQL statement to execute against the host database from the client machine.

Step 8.   Click the Enable radio button to start collecting SQL Response timing information.

Step 9.   Click **OK** to save your changes and enable Client SQL Response monitoring. Click **Cancel** to exit without saving your changes.

Step 10. Close or minimize the PATROL Console.

Step 11. Copy the "DB2C_sqlResp.exe" file from the PATROL agent machine's %PATROL_HOME%\bin directory (or the ".\Agent\bin" subdirectory of the DB2C KM installation directory) to the Windows client machine specified in Step 4.

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Step 12. Open a command line on the Windows client machine.

Step 13. From the command line, run the "DB2C_sqlResp.exe" program with no flags set.

Step 14. The Client SQL Response client program will then prompt the user for the name of the PATROL agent host, its port number, and a user ID and password to be used to log into PATROL from this client application.

NOTE: The Client SQL Response client program has several flags which will allow the user to enter from the command line all information described in Step 14, as well as other settings.   See DB2C_sqlResp.exe help for details (`DB2C_sqlResp -help`).

NOTE: The Client SQL Response client program may be set up to run at startup by placing it in the Windows Startup folder, or, except for Windows 95/98 machines, it may be configured to run as a service.   Consult Microsoft Windows documentation for more information.

How to Set Up Host SQL Response Monitoring

The Host SQL Response time measures the amount of time to issue a SQL statement against a host database and receive data back from DB2. That total time (stored in parameter HostSQLResponseTotalTime) is broken down into four separate components: the time to connect to the DB2 Connect database alias (HostSQLResponseConnectTime), the time to send the request to the mainframe (HostSQLResponseRequestTime), the time to execute the SQL statement (HostSQLResponseDB2Time), and the time to retrieve the result set (HostSQLResponseResultTime).

This section provides step-by-step instructions to set up the DB2C KM and the mainframe to begin gathering data for the Host SQL Response parameters. The following sub-sections will describe what timing issues to watch out for (*Timing Issues*), how to install Host SQL Response components on the mainframe (*Installing DB2PERF on the Mainframe*), how to test the Host SQL Response mainframe components once they've been installed (*Testing DB2PERF*), and finally, how to configure the DB2C KM for Host SQL Response monitoring (*Enabling Host* SQL Response Monitoring from the DB2C KM).

Timing Issues

As with SQL Response timing and Client SQL Response timing, there are timing accuracy issues to be aware of when configuring Host SQL Response. Two major potential issues are timing fluctuations due to varying SQL statement result sets, and timing fluctuations due to DB2 Connect configuration changes. Please read the *Timing Issues* section in *How to Set Up SQL* Response Monitoring for detailed information.

Installing DB2PERF on the Mainframe

DB2PERF is included in the DB2C KM distribution file for agent install. All files associated with it are placed in the DB2PERF subdirectory of the ManageWare install directory (which is, by default, C:\Program Files\ESI Software\ManageWare on WINDOWS and user-defined on UNIX).

Following are mainframe installation instructions for DB2PERF. Only experienced mainframe administrators should deviate from these instructions. In the examples given below, the mainframe is named 'p390', the sample mainframe user ID (*mfuserid*) is 'JBROWN', and no password is shown. Remember to replace those values with those appropriate for your installation.

Step 1. Upload the DB2PERF.load and DB2PERF.dbrm files to the mainframe.

- Upload transfer method must be **binary**

- Do not enable CRLF or ASCII translation

- Target file attributes must be:
  LRECL=80,BLKSIZE=3120,RECFM=FB,DSORG=PS

- See the following for a sample upload using FTP:

```
C:\Program Files\ESI Software\ManageWare\MFPerf>ftp p390
Connected to P390.
220-FTPD1 IBM FTP CS V2R7 at p390, 19:22:37 on 2000-08-11.
220 Connection will close if idle for more than 5 minutes.
```

```
User (P390:(none)): JBROWN
331 Send password please.
Password:
230 JBROWN is logged on.  Working directory is " JBROWN.".
ftp> bin
200 Representation type is Image
ftp> quote site lrecl=80 blksize=3120 recfm=fb
200 Site command was accepted
ftp> put DB2PERF.load 'JBROWN.DB2PERF.UPLOAD'
200 Port request OK.
125 Storing data set JBROWN.DB2PERF.UPLOAD
250 Transfer completed successfully.
22000 bytes sent in 3.54 seconds (6.22 Kbytes/sec)
```

- Remember to repeat for `DB2PERF.dbrm`.

Step 2. Receive the uploaded files by performing the following:

- Log into a mainframe TSO session

- Execute the TSO command RECEIVE INDATASET, for example:

   ```
   TSO RECEIVE INDATASET ('JBROWN.DB2PERF.UPLOAD')
   ```

- When prompted by message "`INMR906A Enter restore parameters or 'DELETE' or 'END' +`", press **Enter**.

- This will create a load library called '`mfuserid.DB2PERF.LOADLIB`' with a member called `DB2PERF`. In our example, `mfuserid` is `JBROWN`.

- Remember to repeat for `DB2PERF.dbrm`:

Step 3. If necessary, copy or move the `DB2PERF` load library members into a load library available to the DB2 Stored Procedure Address Space job.

Step 4. Define DB2PERF to DB2 as a stored procedure. Sample JCL to perform this task as a batch job is provided in the `DB2PERF_7.JCL` file (`DB2PERF.JCL` for DB2 Version 5).

- Upload the JCL to the mainframe as shown in the following example:

```
C:\Program Files\ESI Software\ManageWare\MFPerf>ftp p390
Connected to P390.
220-FTPD1 IBM FTP CS V2R7 at p390, 19:22:37 on 2000-08-11.
220 Connection will close if idle for more than 5 minutes.
User (P390:(none)): JBROWN
331 Send password please.
Password:
230 JBROWN is logged on.  Working directory is "JBROWN.".
ftp> put DB2PERF_7.JCL JCL.CNTL(DB2PERF)
200 Port request OK.
125 Storing data set JBROWN.JCL.CNTL(DB2PERF)
250 Transfer completed successfully.
1871 bytes sent in 0.00 seconds (1871000.00 Kbytes/sec)
```

- The DB2PERF_7.JCL file that contains the CREATE PROCEDURE statement references a variable for edit replacement named !WLMENV! which does not exist in the create statement. Instead, to implement the DB2PERF stored procedure in the WLM environment, the 'NO WLM ENVIRONMENT' string in the create statement should be replaced with 'WLM ENVIRONMENT xxxxxxxx' where 'xxxxxxxx' is the name of the appropriate WLM environment. If the string is left as 'NO WLM ENVIRONMENT' the procedure will execute in the DB2 Single Stored

Procedure Address space. Additionally, the stored procedure must be re-linked to execute with the WLM environment instead of the single stored procedure address space (DSNSPAS). After setting up and authorizing the environment the following JCL may be modified to link-edit DB2PERF for WLM environments:

```
//STEP1   EXEC PGM=IEWL,
//        PARM='LIST,XREF,MAP,RENT,AMODE=31,RMODE=ANY'
//SYSPRINT DD SYSOUT=*
//SYSLIB   DD DISP=SHR,DSN=your.RUNLIB.LOAD
            DD DISP=SHR,DSN=DSN710.SDSNLOAD
//SYSLMOD  DD DISP=SHR,DSN=your.RUNLIB.LOAD
//SYSUT1   DD SPACE=(1024,(50,50)),UNIT=SYSDA
//SYSLIN   DD *
   ENTRY CEESTART
   REPLACE DSNALI(DSNRLI)
   INCLUDE SYSLIB(DB2PERF)
   INCLUDE SYSLIB(DSNRLI)
   NAME DB2PERF (R)
//*
```

- Edit the uploaded JCL to include a valid JOB card and values for the symbolic variables that reference your DB2 objects (see comments in the JCL file for more information).

- Submit the job.

Step 5. Bind DB2PERF to DB2. Sample JCL to perform this task as a batch job is provided in the DB2PBIND.JCL file.

- Upload the JCL to the mainframe as shown in the following example:

```
C:\Program Files\ESI Software\ManageWare\MFPerf>ftp p390
Connected to P390.
220-FTPD1 IBM FTP CS V2R7 at p390, 19:22:37 on 2000-08-11.
220 Connection will close if idle for more than 5 minutes.
User (P390:(none)): JBROWN
331 Send password please.
Password:
230 JBROWN is logged on.  Working directory is "JBROWN.".
ftp> put DB2PBIND.JCL JCL.CNTL(DB2PBIND)
200 Port request OK.
125 Storing data set JBROWN.JCL.CNTL(DB2PBIND)
250 Transfer completed successfully.
1871 bytes sent in 0.00 seconds (1871000.00 Kbytes/sec)
```

- Edit the uploaded JCL to include a valid JOB card and values for the symbolic variables that reference your DB2 objects (see comments in the JCL file for more information).

- Submit the job.

Step 6. Define EXECUTE privileges in DB2 to allow execution of the stored procedure

Testing DB2PERF

Once installation of DB2PERF is complete, test to ensure it is properly installed:

Step 1. Start IBM's Stored Procedure Builder (DB2 Connect V7.x), IBM's Development Center (DB2 Connect V8.x) or a similar utility that can pass parameters to DB2 stored procedures.

Step 2. Connect to a database alias on which you will be performing Host SQL Response monitoring.

Step 3. If it was installed properly, DB2PERF should appear in the list of stored procedures for the database alias specified in Step 2. If using the IBM Development Center, you may have to adjust filtering to see the stored procedure.

Step 4. Run DB2PERF.

Step 5. You will be prompted for arguments. Enter a valid SQL statement for the first argument, and "N" for the second.

Step 6. Two decimal values are returned as output parameters, the first of which should be a positive value (the response time in seconds), and the second will be zero, unless errors occur. If errors occur, the second return parameter will contain a valid SQLCODE for the error.

Enabling Host SQL Response Monitoring from the DB2C KM

You can setup Host SQL Response monitoring using a PATROL Operator Console or a PATROL Developer Console.

Summary: This section describes how to setup SQL response monitoring for a DB2 Connect using PATROL. This task assumes that you have already performed the following activities:

- properly set the DB2 registry variable DB2CONNECT_IN_APP_PROCESS as discussed in the *Timing Issues* sub-section of *How to Set Up SQL Response Monitoring*

- properly installed DB2PERF, as described above in *Installing DB2PERF* on the Mainframe

Step 1. Choose **Performance => Host SQL Response Config** from the KM commands on the pop-up menu for the <Database Alias>.

The following dialog box appears:

Figure 18   Configure the Host SQL Response monitoring from this dialog

Step 2.   Enter the host user ID and password for the account that has been granted the proper privileges to execute the SQL statement to be used in the response timing.

Step 3.   Enter the schema to which the DB2PERF stored procedure was added (JBROWN's schema could be used in the example above).

Step 4.   Enter the SQL statement to execute against the host database.

Step 5.   Click the Enable radio button to start collecting SQL Response timing information.

Step 6.   Click **OK** to save your changes and begin SQL response monitoring. Click **Cancel** to exit without saving your changes.

E-Mail and Pager Notification

BMC has several solutions that integrate with PATROL to provide e-mail and pager notification, including PATROL Enterprise Manager (PATROL EM). PATROL EM provides the ability to send e-mail and/or pager notification when a critical event is triggered.

Refer to the BMC website, http://www.bmc.com, for additional information.

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