

HP Smart Plug-in for DB2 Databases

for the UNIX, Linux and Windows operating systems

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Installation Guide

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1 Introduction

Audience

This document is meant for the HP Operations Manager Administrator. It explains the prerequisites and installation steps for a successful installation of the DB2SPI.

Prerequisites

The reader should be familiar with the HP Operations Manager product as well as have some understanding of network setup and maintenance.

Related Documents

This section illustrates what information is available for the NiCE DB2SPI. Most of them are delivered together with the NiCE DB2SPI. On HP Operations Manager for UNIX/Linux systems you may find them at `/opt/OV/doc/C/db2spi/`.

All Guides may also be downloaded from the NiCE Customer Portal www.nice.de/login.html.

The following manuals come with the DB2SPI:

- Installation Guide

Explains installation and removal of the DB2SPI in HP Operations Manager environments (management server and managed nodes).

- Administrator's Guide

Explains the basic configuration, deployment and administrative tasks to keep the SPI up and running successfully in the management environment.

- **Operator's Guide**
Explains the tasks and applications for the HP OM operator that is responsible for DB2 server monitoring.
- **Concepts and Troubleshooting Guide**
Explains the architecture and components of the DB2SPI, the files and directories used and provides sample scenarios for efficient troubleshooting.
- **Reference Guide**
Explains the performance data collected, the rules they depend on and the collection characteristics.
- **Release Notes**
Gives the most recent information about the product and is updated with every patch released.

In addition to the documentation for the DB2SPI, related HP Software products also provide a comprehensive set of manuals, which aim to assist you in using the products and improving your understanding of the underlying concepts.

Print History

The manual printing date and part number indicate its current edition. The printing date will change when a new edition is printed. Minor changes may be made at reprint without changing the printing date. The manual part number will change when extensive changes are made.

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2 Installation Prerequisites

This section describes the various platforms and software versions supported by the DB2SPI. Make sure that a supported version of HP OM is installed and running on both the management server and the managed node and, in addition, that a supported version of DB2 is installed and running on the DB2 server.

This includes the aspects:

- HP OM platforms and versions
- DB2 platforms and versions

Note:

To determine whether DB2SPI is supported for a HP Operations Management Server and DB2 platform and version combination, please refer to the HP Support Matrix document.

HP Operations Management Server

Management Server physical Requirements

- Disk Space Requirements

The DB2SPI requires up to 250 MB disk space on the management server to store programs and configuration data.

- Memory (RAM) Requirements

DB2SPI will require about 10MB RAM on the HP OM management server.

HP Operations Manager for UNIX and Linux

The DB2SPI 04.00 supports HP Operations Manager (HP OM) for UNIX 9.x on the following platforms:

- HP-UX
- Solaris
- Linux

Please note that this list may change with the support of the respective platforms by HP and NiCE.

Internal command forwarding requires that the command line buffer of the operating system must at least be 1024 byte. Please use the **ulimit -s** command to verify your command line buffer size.

HP Operations Manager for Windows

The DB2SPI 04.00 can be installed in English HP Operations Manager for Windows 8.16 and later as well as and 9.x environments.

HP Operations Manager Configuration

Managed Node Status

The operations management server must be a managed node itself and have the agent software installed.

This is required to make use of the ServiceNavigator (HP OM for UNIX) and HP Reporter integration. If this requirement is not fulfilled, functionality of the DB2SPI will be limited.

Performance Data Collection Tools

In order to store metric data collected by the DB2SPI, the **DSI2DDF** package must be installed on the HP OM management server and the respective instrumentation must have been deployed to the managed nodes (the DB2 servers).

Perl on the Management Server

Some functionality of the DB2SPI is provided as Perl scripts on the management server (UNIX, Linux or Windows). The HP Operations Agent supplies Perl 5.8.

During installation of the product, the DB2SPI determines the version of the HP agent and links itself to the proper HP agent Perl. Note, that this link may become invalid when upgrading the HP agent at a later time (e.g. from DCE to HTTPS or to more recent versions).

IBM DB2 Servers

DB2 Server physical Requirements

- Disk Space for Binaries and Configuration

The DB2SPI requires less than 12 MB of disk space for binaries, scripts and configuration data on the DB2 server.

- Disk Space for Runtime Data

The main part of disk space will therefore be used for storing performance data.

The amount of disk space required at run time depends on the number of DB2 instances, databases and tablespaces that the DB2SPI is configured to monitor.

To make a rough estimation of the amount of free disk space required by the DB2SPI, assuming that performance monitoring is enabled and the Performance Agent is preserving the data it collects for graphing and reporting for one year, you can use the following formula:

- 2 MB for temporary and log files
- 75 MB for the HP Reporter data collection
- 5 MB x [number of databases to be managed]
- 50 MB x [number of tablespaces to be managed]

where:

number of databases total number of databases monitored in all instances on the respective DB2 server

number of tablespaces total number of tablespaces monitored in all instances and databases on the respective DB2 server

During configuration on a specific DB2 server, the time frame for the data storage can be reduced to one, three or six months.

This reduces the amount of data to one twelfth, one fourth or one half of the estimation calculated above.

Note that the amount required is calculated based on the settings during the initial configuration. Adding huge databases with a large number of tablespaces, for example, will not lead to a recalculation of required disks space and may lead to a significant shorter time frame for storage. This is not a DB2SPI limitation, but in the underlying HP PA.

Please get in touch with our product support to help retaining the data in such scenarios.

- Memory (RAM) Requirements

DB2SPI will require about 30 MB RAM on the HP OM managed nodes (DB2 servers).

DB2 Server Operating Systems

The DB2SPI supports DB2 servers running on the following operating systems:

- AIX
- HP-UX
- Solaris
- Red Hat Enterprise Linux
- SuSE Enterprise Server
- Windows Server

The versions of the DB2 server operating systems depend on the HP OM agents that are installed on these systems and can be determined from their support matrix.

Note:

To determine whether DB2SPI is supported for a HP Operations Management Server and DB2 platform and version combination, please refer to the HP Support Matrix document.

UNIX based DB2 Servers

Internal command forwarding requires that the command line buffer of the operating system must at least be 1024 byte. Please use the **ulimit -s** command to verify your command line buffer size.

In order for the DB2SPI to work correctly it must be possible to determine the model string using the appropriated system commands from the agent account. (use opcdploy / ovdeploy to verify).

Platform	Command
HP-UX	model

AIX	uname -M
Sun Solaris	uname -i

Note that there is no such need for Linux or Windows based DB2 servers.

Korn Shell

The DB2SPI relies on the korn shell for its scripts to work properly on UNIX or Linux. The location of the shell is assumed to be in

```
/usr/bin/ksh
```

If the korn shell is installed in another location, a symbolic link needs to be created to the location mentioned above.

DB2 Instance Owner

By default, the DB2SPI switches to the instance owner's user environment on UNIX/Linux based DB2 servers in order to perform all operations upon DB2. This user usually has the same name as the instance itself, and the DB2SPI uses the name of the instance for access to the database.

Alternatively, a dedicated user may be configured for monitoring. This is discussed later in this guide.

Note, that input/output can be adversely affected by inappropriate settings of the instance user environment, for example stty in the profile file.

DB2 Versions

The DB2SPI 04.00 supports DB2 UDB versions 9.1, 9.5, 9.7, 10.1 and 10.5.

For DB2 versions 9.1 and 9.5 certain restrictions apply and not all metrics are supported. Please see the DB2SPI Reference Guide for details.

Note:

The DB2SPI supports the DB2 Enterprise Server Edition. For other editions please refer to the respective support matrix.

To determine whether DB2SPI is supported for a HP Operations Management Server and DB2 platform and version combination, please refer to the HP Support Matrix document.

Remote Monitoring

To successfully monitor remote databases using this monitoring solution, the local and remote database versions need to be one of either sets:

- DB2 V9.1 and V9.5
- DB2 V9.7, V10.1 and 10.5

Example: A mixture of DB2 V9.5 (as local or remote DB) and DB2 V9.7 (as local or remote DB) is not supported, while a mixture of DB2 V9.7 and DB2 V10.5 is.

User for DB2SPI Monitoring

DB2SPI connects to the DB2 instances and databases to monitor their availability and performance. To find out specific performance data, the DB2SPI uses the built-in routines and views of DB2 itself. For this kind of database connection, an authorization is necessary.

Depending on the operation system of the DB2 server and company policies, there are two possible ways to authorize the DB2SPI.

For DB2 servers running under UNIX / Linux:

- Use the DB2 instance user who is already authorized for all connections
- Create a dedicated user and configure it for each database explicitly

For DB2 servers running under Windows:

- Use the HP Agent account (Default: Local System)
- Create a dedicated user and configure it for each database explicitly

Note:

Please remember to specify the dedicated user (and password) each time a new database is added to the monitoring scope.

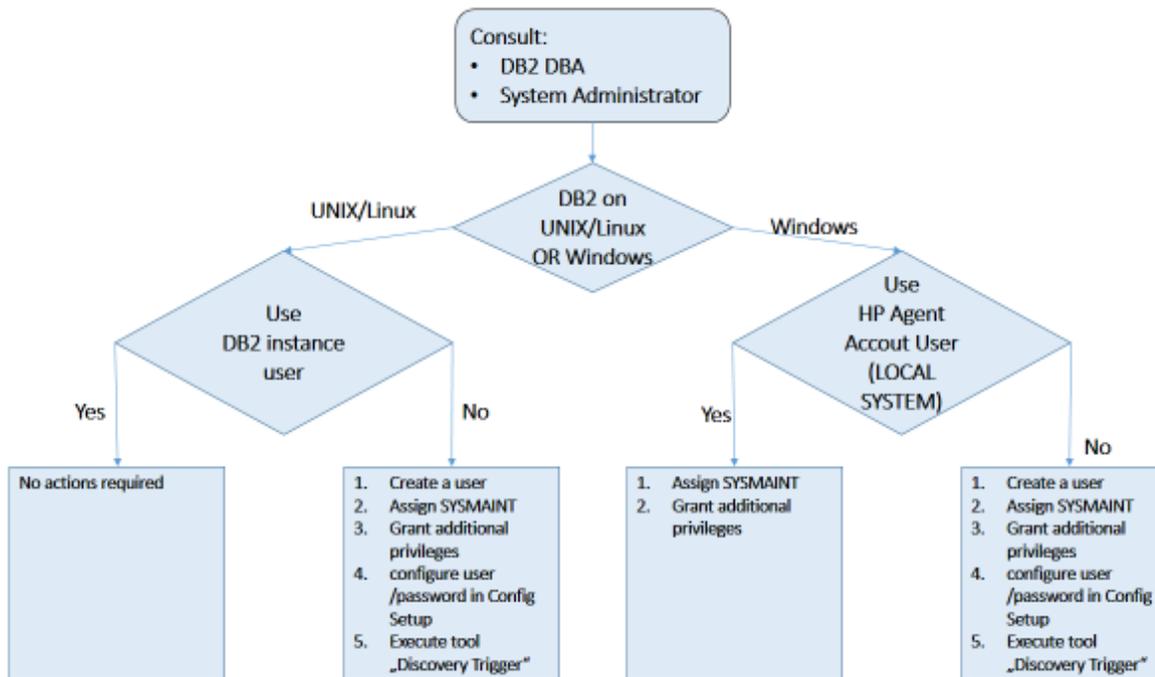


Figure 1 User for DB2 Monitoring

Use DB2 Instance User for DB2SPI Monitoring on UNIX/Linux

The DB2 instance user already has SYSADM authorizations as well as all privileges, so in this case there are no issues and no further configuration is required.

Use a Dedicated User for DB2SPI Monitoring on UNIX/Linux

To use a dedicated user for the DB2SPI Monitoring follow these steps:

- 1 Create a dedicated system user that is called for example “db2monitor”
- 2 Assign SYSMAINT rights to “db2monitor”
- 3 Grant additional DB2 privileges to “db2monitor” as described in the section below
- 4 Configure the user “db2monitor” and its password **for each database** either during Config Setup or later using the Entity Filter tool after the initial setup has been completed

- 5 Execute the tool “Discovery Trigger” directly after Config Setup has been executed

Use HP Agent User for DB2SPI Monitoring on Windows

IBM recommends to install DB2 with high security settings by checking the check box "Enable operating system security" during the installation processes. However, if you have done so, even the SYSTEM account does not have sufficient permissions to connect or activate a database. The DB2SPI requires a minimum of SYSMANT authority to provide its functionality.

To ensure that DB2SPI has enough rights for monitoring the DB2 databases follow these steps:

- 1 Assign SYSMANT rights to “LOCAL SYSTEM” with the help of the SYSMANT_GROUP.
- 2 Grant additional DB2 privileges to “LOCAL SYSTEM” as described in the section below.

Use a Dedicated User for DB2SPI Monitoring on Windows

To use a dedicated user for the DB2SPI Monitoring follow these steps:

- 1 Create a dedicated local user that is called for example “DB2Monitor”
- 2 Assign SYSMANT rights to both “DB2Monitor” and SYSTEM with the help of the SYSMANT_GROUP
- 3 Grant additional DB2 privileges to “DB2Monitor” as described in the section below
- 4 Configure the user “DB2Monitor” and its password **for each database** either during Config Setup or later using the Entity Filter tool after the initial setup has been completed
- 5 Execute the tool “Discovery Trigger” directly after Config Setup has been executed

Grant Additional DB2 Privileges

In this paragraph the additional permissions are listed that are required for the user connecting to database with the DB2SPI monitoring modules.

Example:

```
Connect to SAMPLE
```

```
grant EXECUTE on function SYSPROC.MON_GET_BUFFERPOOL to user DB2Monitor
```

```
grant EXECUTE on function SYSPROC.MON_GET_MEMORY_POOL to user DB2Monitor
```

```

grant EXECUTE on function SYSPROC.MON_GET_MEMORY_SET to user DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_MEMORY_SET to user DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_CONNECTION to user DB2Monitor
grant SELECT on SYSIBMADM.MON_DB_SUMMARY to user DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_FCM to user DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_FCM_CONNECTION_LIST to user
DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_FCM to user DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_FCM_CONNECTION_LIST to user
DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_PKG_CACHE_STMT to user
DB2Monitor
grant EXECUTE on function SYSPROC.MON_GET_PKG_CACHE_STMT to user
DB2Monitor
grant SELECT on SYSIBMADM.MON_TBSP_UTILIZATION to user DB2Monitor
grant SELECT on SYSIBMADM.MON_BP_UTILIZATION to user DB2Monitor
grant SELECT on SYSIBMADM.MON_TBSP_UTILIZATION to user DB2Monitor
grant SELECT on SYSIBMADM.MON_BP_UTILIZATION to user DB2Monitor

```

The user name DB2Monitor has been used in this example, it needs to be replaced by the name of the dedicated DB2SPI Monitoring user or by "SYSTEM" in case the DB2 server is running under Windows and the HP Agent User should be used for monitoring.

OM Agent

Managed Node Status and Agents installed

The DB2 servers need to have an HP operations agent installed, as well as the appropriate HP operating system policies and instrumentation (also known as "HP Infrastructure SPI") in order to be able to function properly.

With HP OM for UNIX the DB2 servers must be "controlled" managed nodes in the respective management domain. If they should be set up as "monitored only" or "message allowed" some functionality, like service tree updates, will not be available.

Performance Data Collection Tools

In order to store metric data collected by the DB2SPI, the DSI2DDF package must be installed on the HP OM management server and the respective instrumentation must have been deployed to the managed nodes (the DB2 servers).

Perl on Managed Nodes

On the DB2 server nodes that need to be managed as well as on the management server, Perl is an essential component, because large parts of the DB2SPI are written in Perl. The Perl version 5.8 is supported on these nodes, as installed with the HP operations agent.

Note that NO OTHER Perl installation will be used by DB2SPI and DB2SPI does NOT interfere with those installations. Only the HP agent Perl will be used and hence those other installations can be maintained independent from the DB2SPI.

3 Installing the DB2SPI

In this section, you will find information describing in detail the steps you need to perform to install the SMART Plug-in for DB2.

This section covers the following topics:

- Package and Component Identification
- Installing the DB2SPI Software on OM for Windows
- Installing the DB2SPI Software on OM for UNIX
- Installing the ATOP Communication Layer

The installation of DB2SPI components integrated into other products (HP Reporter and HP Performance Manager) are explained in the appendix.

Package and Component Identification

The DB2SPI consists of a several packages.

DB2SPI application packages for HP Operations Manager

This is the main trunk of software, consisting of tools, monitors, and help pages and so on that will be uploaded into the HP Operations Manager database.

The ATOP component (cross-platform communication layer for the DB2SPI is included in these packages:

Package Name	HP Operations Manager on
HPOvSpiDB2.depot	HP-UX
HPOvSpiDB2.sparc	Solaris
HPOvSpiDB2.rpm	Linux
HPOvSpiDB2.msi	Windows 8
HPOvSpiDB2_64.msi	Windows 9

Integration Packages

- The DB2SPI console packages are for HP Operations Manager for Windows Remote Console systems. They don't need to be installed separately on the HP Operations Management Server:

`HPOvSpiDB2C.msi`

`HPOvSpiDB2C_64.msi`

- The DB2SPI graphing integration into HP PM for Windows, as InstallShield packages:

`HPOvSpiDB2G.msi`

`HPOvSpiDB2G_64.msi`

In the subsequent sections the necessary steps are described to install these packages on the respective systems.

Upgrading DB2SPI from an earlier Version

The upgrade process is described in the most recent "DB2SPI Release Notes". Please refer to that document.

HP OM for Windows

Installing the MSI Packages

DB2SPI 04.00 must be installed on the management server via InstallShield. Please perform the following step:

- On HP Operation Manager on Windows 8 install the DB2SPI by executing the file:

`HPOvSpiDB2.msi`.

- On HP Operation Manager on Windows 9 install the DB2SPI by executing the file:

`HPOvSpiDB2_64.msi`

InstallShield will guide you through the installation.

Clustered HPOM for Windows Server

Please note that the DB2SPI must first be installed on the "first cluster node" of your OMW cluster. It is important that it owns the OMW cluster resources while the SPI installation is being performed.

Subsequent installation on "secondary cluster nodes" must be made after this step.

Verifying Installation of the DB2SPI Software

To verify that the installation of the DB2SPI completed successfully on the HP OM for Windows management server, carry out the following steps:

- 1 Open the Windows "Control Panel" and use the "Add/Remove Programs" tab to display the list of installed software. You should find an entry using the term "DB2SPI" or "Smart Plug-in for IBM DB2".
- 2 Check that the ATOP server process is registered correctly a service. You can do this by opening the "Control Panel → Administrative Tools → Services". You should see the following entry in the list of installed services:
- 3 ATOP2 Server
- 4 Check that the elements listed in are present in the OM for Windows Console GUI:

Table 1: DB2SPI Components in HP OM for Windows

HP OM Component	HP OM Component Name	
Node Groups	DB2-UNIX	
	DB2-WINDOWS	
Tool Groups	DB2	
	DB2SPI Admin	
User Roles	DB2 Operator	
	DB2SPI Admin	
Policy Groups	SPI for DB2	DB2SPI Core
		DB2SPI Details
		FCM
		HADR

		SQL Queries
		Tablespaces+Bufferpools
		DB2SPI Logfiles
		Logfiles for DB2 on UNIX
		Logfiles for DB2 on Windows
		DB2SPI MgmtSvr

For the DB2SPI and its Console package, installation/removal logging is written to <OMDataDir>\log\SPIInstallLogs.

The filenames are:

- DB2SPI_Install.log
- DB2SPI_Console_Install.log

HP OM for UNIX or Linux

Since HP OM for UNIX and HP OM for Linux are functionally identical, we put these two platforms together in one chapter. The only difference is how the package is unpacked, all subsequent steps are identical.

Installing the SD Package (HP OM for HP-UX)

For the installation on the OM for UNIX management server, carry out the following steps:

- 1 Login to the OM for UNIX management server as user `root`.
- 2 Make the software package available on the system on a hard drive or network drive.
- 3 Use the `swinstall` command to install the DB2SPI software bundle.
Enter:

```
swinstall -s /<directory>/<depot_name> DB2SPI
```

As an example, this might read as:

```
swinstall -s /tmp/HPOvSpiDB2.depot DB2SPI
```

The `swinstall` command installs the software bundle from the SD depot and performs basic configuration.

The software bundle contains all the DB2SPI software, configuration files, and documentation as well as the communication component (ATOP).

Alternatively, use the `swinstall` GUI and mark and install the DB2SPI software bundle.

Installing the SPARC Package (HP OM for Solaris)

For the installation on the OM for UNIX management server, carry out the following steps:

- 1 Login to the OM for UNIX management server as user `root`.
- 2 Make the software package available on the system on a hard drive or network drive.
- 3 Use the `pkgadd` command to install the DB2SPI software bundle. Enter:
`pkgadd /<directory>/<depot_name> DB2SPI`

As an example, this might read as:

```
pkgadd -d /tmp/HPOvSpiDB2.sparc DB2SPI
```

The `pkgadd` command installs the software bundle and performs basic configuration.

The software bundle contains all the DB2SPI software, configuration files, and documentation as well as the communication component (ATOP).

Installing the RPM Package (HP OM for Linux)

For the installation on the HP OM for Linux management server, carry out the following steps:

- 1 Login to the HP OM for Linux management server as user `root`.
- 2 Make the software package available on the system on a hard drive or network drive.
- 3 Use the `rpm` command to install the DB2SPI software bundle. Enter:
`rpm -U --nodeps /<directory>/<rpm_name>`

In our example, this might read as:

```
rpm -U --nodeps /tmp/HPOvSpiDB2.rpm
```

The `rpm` command installs the software bundle from the RPM depot and performs basic configuration.

The software bundle contains all the DB2SPI software, configuration files, and documentation as well as the communication component (ATOP).

Verifying Installation of the DB2SPI

To verify that the installation of the DB2SPI completed successfully on the OM for UNIX or Linux management server, carry out the following steps:

- 1 Check the list of installed software.
 - HP OM for UNIX: On the HP-UX command line, enter:
swlist | grep DB2SPI
In the list that is displayed, look for the following entry:
DB2SPI 04.00 DB2 SMART Plug-In for HP
OVO / HP Operations Manager
 - HP OM for UNIX: On the Solaris command line, enter:
pkginfo | grep DB2SPI
In the list that is displayed, look for the following entry:
DB2SPI 04.00 DB2 SMART Plug-In for HP
OVO / HP Operations Manager
 - HP OM for Linux: On the command line, enter:
rpm -qa | grep DB2
In the list that is displayed, look for the following entry:
HPOvSpiDB2-04.00.000-1
- 2 Check that the ATOP server process is registered correctly as an OV service. Note, that you must have `/opt/OV/bin` in your search path to do so.
 - On HP OM for UNIX 9.x., or OM for Linux 9.x, enter:
ovc -status atop_server
The response must list ATOP Server to be "Running"
- 3 Check that the elements listed in Table 2 are present in the OM GUI:

Table 2: DB2SPI Components in OM for UNIX or Linux

Component Type	Component Name	
Node Groups	DB2-UNIX	
	DB2-WINDOWS	
Message Groups	DB2	
	DB2SPI	
Application Groups	DB2 Tools	
	DB2SPI Admin	
User Profiles	DB2 Operator Profile	
	DB2SPI Admin Profile	
Policy Groups	SPI for DB2	DB2SPI Core
		DB2SPI Details
		FCM
		HADR
		SLQ Queries
		Tablespaces+Bufferpools
		DB2SPI LogFiles
		Logfiles for DB2 on UNIX
		Logfiles for DB2 on Windows
		DB2SPI MgmtSvr

Please note that the node groups and policy groups have been changed since DB2SPI 03.8x.

If either of these steps fails to produce the desired results, you may check the following log files on the HP OM for UNIX management server on HP-UX for more specific information relating to installation problems:

`/var/adm/sw/swagent.log`

`/var/adm/sw/swinstall.log`

Automatic Changes on the Management Server

During the installation of the DB2SPI, some automatic configuration takes place on the management server.

Perl Link

A link is created in the `/opt/OV/db2spi/bin` directory that points to the OM agent Perl, which depends on the type of agent used on the management server

Selective Distribution Support

If selective distribution is enabled on the management server, i.e., the file `/etc/opt/OV/share/conf/OpC/mgmt_sv/seldist` exists, the DB2SPI is integrated in this configuration file.

In that case the DB2SPI selective can be used during normal instrumentation deployment later on.

ATOP Server Installation

On the OM for UNIX / Linux management server a new OV service, `atop_server`, is established for the multi-platform communication. Detailed information may be found in the “DB2SPI Concepts Guide” that is available on the NiCE Customer Portal at www.nice.de/login.html.

ATOP Communication Layer

The DB2SPI uses a communication layer of its own for the execution of interactive applications on the managed nodes. This layer is called the “Application Tunnel for Operations” (ATOP). It provides input/output functionality across all platforms the DB2SPI may be installed on.

In most environment, everything is installed and configured automatically. The following two scenarios require some manual installation or configuration:

- 1 On HP OM for UNIX or Linux management consoles using the **Java GUI Display Station** requires the manual installation of ATOP on the management console.
- 2 A **firewall** between the HP OM management server, the DB2 server or the HP OM management consoles may require some configuration.

For more detailed information about ATOP, refer to the “DB2SPI Concepts Guide”.

ATOP Installation on the OM for UNIX Java GUI Display Station

The DB2SPI supports full application interaction in the HP OM for UNIX or Linux Java GUI environment with the embedded ATOP technology.

However, since it is not a component of the HP OM for UNIX or Linux Java GUI itself, some service and programs need to be installed on the Java GUI station similar to the Java GUI itself with a web-based installation procedure.

Note:

The Java GUI is a requirement on the HP OM for UNIX or HP OM for Linux management station where ATOP is to be installed.

As the Java GUI itself, ATOP is available for both UNIX and Windows. Please download the appropriate package from the download page on your HP OM management server.

Upgrading ATOP on the Java GUI from an earlier Version

The upgrade is simply a re-installation after the older version has been removed.

Installation via Web-Browser

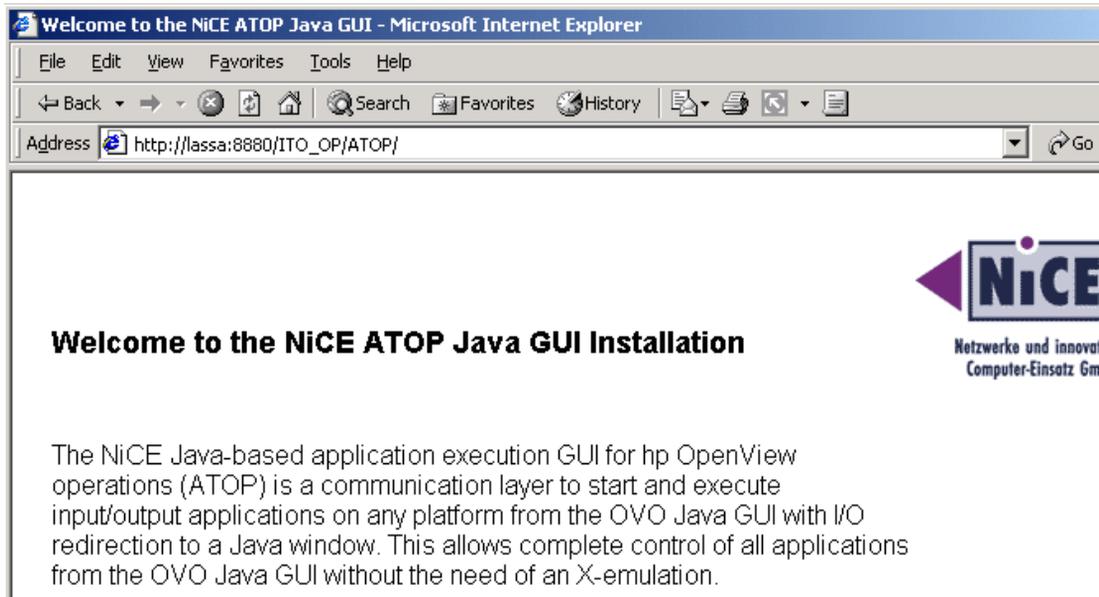
On the Java GUI station, start a web browser and access the page:

`http://<management_server>:3443/ITO_OP/ATOP/`

Don't miss the slash "/" at the end of the line and use upper case characters!

The following screen will appear:

Figure 2: Web page for ATOP installation on Java GUI display station



In this screen, select the platform of the Java GUI Display station and download the appropriate ATOP package. Follow the installation instructions as given of the web page and see section “Installing ATOP on Java GUI Stations on Windows” for more details.

ATOP Configuration for a Firewall

If there is a firewall between any of the servers (HP OM management server, DB2 server, HP OM management consoles), communication ports need to be open.

This might be done by **either**:

- opening the ATOP default ports on the firewall (port 55551) or
- configuring ATOP to use ports which are open already

In the second case, make sure the server and client ports are consistent between all servers!

Use the ATOP configuration and distribution tool “db2s_atopcfg-pl” to change the SERVERPORT on all configuration files on the management server at the same time. Usually the CLIENTPORT is not blocked, but if it is, it may be changed as well.

See sections “ATOP Configuration Files” and “ATOP Configuration and Distribution Tool” for more details.

Afterwards, the updated ATOP configuration file needs to be deployed to the DB2 servers together with the rest of the instrumentation.

To get the updated ATOP configuration file to the HP OM management console use any file transfer technology.

Terminal Server /Remote Desktop Service

Although ATOP does not support Terminal Services in general, it may be used under the right circumstances.

A separate whitepaper describes how to open a remote session on the OM for Windows server that will pass on all windows opened on the OM for Windows server including ATOP windows. The main issue is that remote sessions will pass on most windows but not ATOP windows. To get ATOP windows it is necessary to open a **console session** using the “/console” parameter with the call of the Remote Desktop client on the Connecting Windows client.

Please refer to the Terminal Services Whitepaper, which can be found on the NiCE Customer Portal at www.nice.de/login.html.

For more detailed information about ATOP, refer to the “DB2SPI Concepts Guide”.

4 De-installing the DB2SPI

The instructions in this section describe how to remove the DB2SPI software quickly and cleanly first from the DB2 server and then from the Operations Manager server.

Clean-up the Managed Nodes (DB2 server)

Three steps are necessary to clean up the DB2 servers.

Before cleaning up the central instance you should have removed the DB2SPI components from the managed nodes.

- 1 Execute the "Config Delete" tool (see DB2SPI Administrator Guide) on all DB2 servers to clean up DB2SPI related files and directories.
- 2 De-assign and remove all DB2SPI Policies from the DB2 Servers.
- 3 See section "Appendix D: Removing Policies in HP OM" or consult the HP OM product documentation if you are not sure how to do this.
- 4 In a non-root Agent system "Config Delete" does not delete the file `/etc/db2spi.su` because the current user has no right to do so.

It has to be removed manually using an account with appropriate rights (root).

Clean-up on the HP OM Management Server

The following step remove the DB2SPI from your HP OM management server:

- 1 De-assign and remove the DB2SPI_ownlog0 policy from the HP OM management server.
- 2 Package Removal
- 3 Remove DB2SPI component from the HP OM Configuration Database

Removing the DB2SPI Package

Removing from HP OM for Windows Management Server

To remove the DB2SPI and ATOP components from the OM for Windows management server and complete the general clean-up process:

- 1 On the OM for Windows management server, enter the Control Panel and select the function "Add/Remove Programs"
- 2 Select the components for removal:

DB2SPI

This will remove all installed binaries.

Removing from HP OM for UNIX or Linux Management Server

To remove the DB2SPI and ATOP components from the HP OM for UNIX or HP OM for Linux management server and complete the general clean-up process:

Note:

We also remove all directories and files, which belong to the DB2SPI. These are:

```
/etc/opt/OV/db2spi  
/opt/OV/doc/C/db2spi  
/opt/OV/db2spi
```

Please make sure not to have any individualized configuration files etc. left there that are to be used afterwards or elsewhere or by other applications.

- For HP OM for UNIX on HP-UX:

On the management server, use the `swremove` command to remove the DB2SPI software. Enter:

```
swremove DB2SPI
```

- For HP OM for UNIX on Solaris:

On the management server, use the `pkgrm` command to remove the DB2SPI software. Enter:

```
pkgrm DB2SPI
```

- For HP OM for Linux:

On the management server, use the `rpm` command to remove the DB2SPI software. Enter:

```
rpm -e --nodeps <package name>
```

For example:

```
rpm -e --nodeps HPOvSpiDB2-04.00.000-1
```

At this point in time, also the DB2 service tree is deleted and all user assignments to it are skipped. Users of the Java GUI will get a notification that a configuration change has occurred and will need to reload it.

Removing DB2SPI Components from the Operations Manager Configuration Database

Removal in the Operations Manager for Windows

Unfortunately there is no way to remove all configuration elements of the DB2SPI from the OM for Windows database automatically.

Check the following DB2SPI components from the Operations Manager GUI remove them, if they still exist:

- DB2SPI tools and tool groups (Tool Configuration Editor)
- DB2SPI policies, policy groups and policies grouped by types
- DB2SPI user profiles (User Roles Configuration Editor)

You have to remove some of the DB2SPI integration with the Operations Manager GUI manually. Remove the following DB2SPI components:

- DB2 managed nodes and DB2SPI node groups (Node Configuration Editor)
- DB2 service tree elements (Service Configuration Editor and Service Type Configuration Editor)

Removal in the Operations Manager for UNIX or Linux

Unfortunately there is no way to remove all configuration elements of the DB2SPI from the HP OM for UNIX or Linux database automatically when executing the `swremove` (OM for UNIX) or `rpm` (OM for Linux) command.

You have to remove the DB2SPI integration in the HP OM administration GUI manually. You will have to remove the following DB2SPI components from the HP OM GUI:

- DB2 managed nodes and DB2SPI node groups
- DB2SPI message groups
- DB2SPI applications and application groups

- DB2SPI policies and policy groups
- DB2SPI category
- DB2SPI user profiles

5 Appendix A:

HP Performance Manager Integration (Portable Graphs)

This section explains how to make use of the HP Performance Manager (HP PM) integration supplied with the DB2SPI. HP PM is used to draw performance graphs of the DB2SPI metrics. The DB2SPI metrics are collected with the help of either HP PA or CODA.

To switch on the metric collection follow these steps:

- Execute the DB2SPI tool “Snapshot Enable”
- Execute the DB2SPI tool “PerfRep Enable”
- Deploy the schedule policies called “DB2SPI_Collect_<interval>”

Prerequisites

The DB2SPI Portable Graphs are supported for HP Performance Manager 8.x and 9.0 on Windows and HP-UX.

HP PM may be installed on any system in the local network on any kind of system (UNIX or Windows), which has access to the collected performance data on the DB2 servers.

Installation of the DB2SPI Predefined Graphs

The DB2SPI Portable Graphs resides on the OM management server at:

HP OM for Windows 8	<code>%OvInstallDir%\install\db2spi\DB2SPI_addon</code>
HP OM for Windows 9	<code>%OvInstallDir%\newconfig\OVPM</code>
HP OM for Unix or Linux	<code>/opt/OV/db2spi/addon/OVPM</code>

Now copy the file **VPI_GraphsDB2SPI.txt** to the HP PM server to the appropriate directory:

HP PM on Windows	%InstallDir%\newconfig\OVPM
HP PM on Unix or Linux	/var/opt/OV/conf/perf/

For HP PM Systems running on Windows it is also possible to install one of the following msi packages that may be downloaded from the NiCE Customer Portal at www.nice.de/login.html:

HPOvSpiDB2G.msi for HP PM 8.x

HPOvSpiDB2G_64.msi for HP PM 9.x

After executing this file, InstallShield will guide you through the installation process.

To verify that the DB2SPI Portable HP PM Graphs have been successfully installed, open the directory "**<install_dir>\newconfig\OVPM**" and look for the configuration file called "**VPI_GraphsDB2SPI.txt**".

Once the HP PA/ CODA started collecting, the metrics can be displayed with the HP Performance Manager.

6 Appendix B:

HP Reporter Templates Integration

Installing DB2SPI Reports for HP Reporter

The DB2SPI software contains predefined HP Reporter templates to prepare reports about some performance data collected via HP PA / CODA.

Note:

This applies only to the integration into the HP Reporter. The embedded reporting component of OM for Windows is not able to connect to the PA data store filled by the DB2SPI and therefore cannot be used for DB2SPI reporting-

Prerequisites

The installation of DB2SPI Reports expects the following installations and settings have been done on the HP Reporter hosting system before starting the setup:

HP Reporter Version 4.0 or later is installed

Reports Installation

The installation is simply execution of an InstallShield package on the system hosting the HP Reporter. The package is contained separately on the DB2SPI SPI DVD.

The individual steps are as follows:

- 1 Make the software package available on the system with the HP Reporter installed on a hard drive or network drive.
- 2 Install it using InstallShield with the package `HPOvSpiDB2R.msi`.

When starting the installation, a window pops up:

Figure 3: DB2SPI Service reports installation start



Click "Install" to continue. The package automatically plugs into the HP Reporter.

Manual Step for Cluster Installation

If the DB2SPI Reporter Integration is installed on a clustered OM for Windows management server, the following manual copy must be made:

Copy all files

From: ...\\HP OpenView\\Data\\Reports\\db2spi

To: ...\\HP OpenView\\Data\\shared\\reports\\db2spi

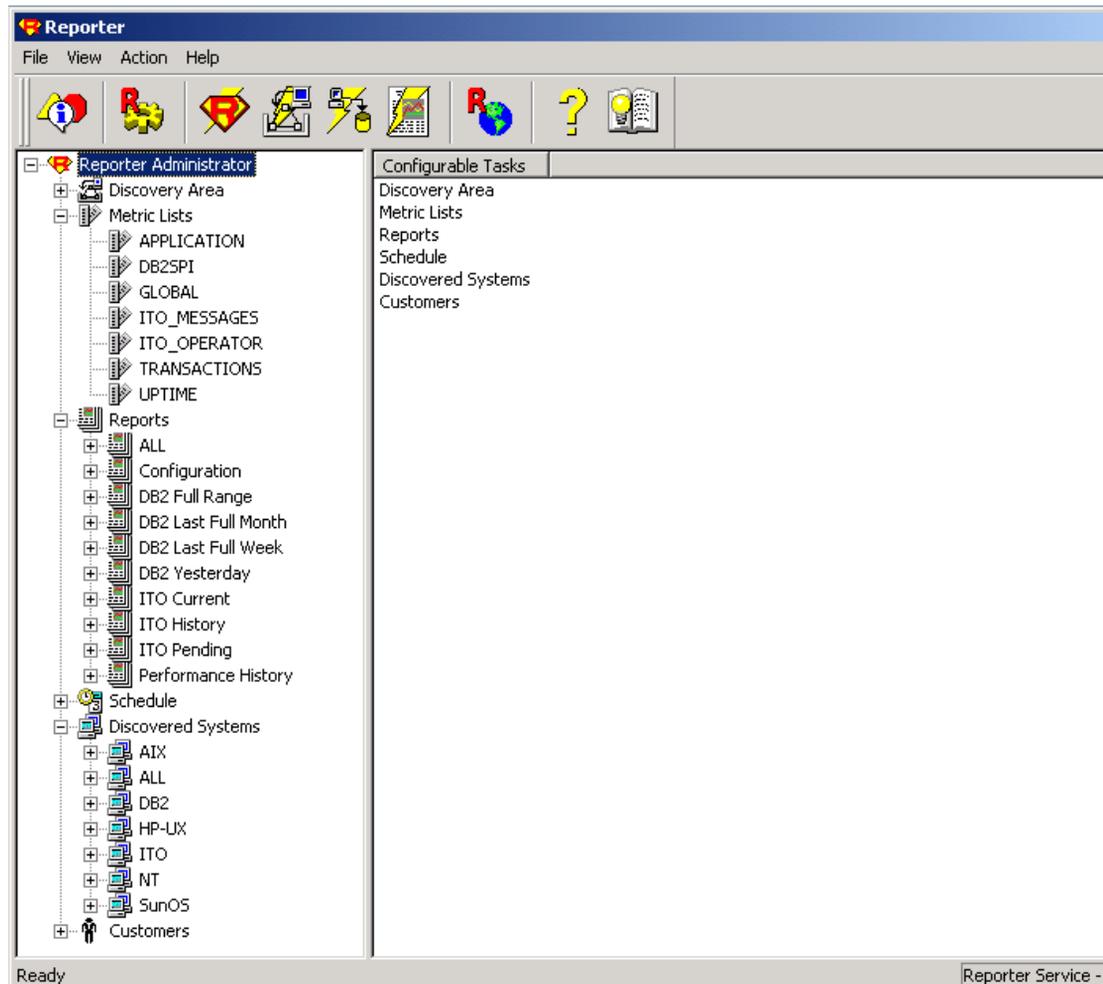
Verification of correct Installation

After installation has finished, start HP Reporter and look for the following elements:

- New element "DB2" in the branch "Metric Lists", which contains a lot of individual metrics
- New elements in the "Reports" branch:
 - DB2 Full Range
 - DB2 Full Month
 - DB2 Full Week
 - DB2 Yesterday

In the HP Reporter GUI, this appears as follows:

Figure 4: HP Reporter GUI with DB2SPI reports installed



No special steps need to be taken to enable or activate the DB2SPI reports. They are prepared just like other reports.

7 Appendix C: ATOP

Installing ATOP on Java GUI Stations on Windows

Installing ATOP on Windows

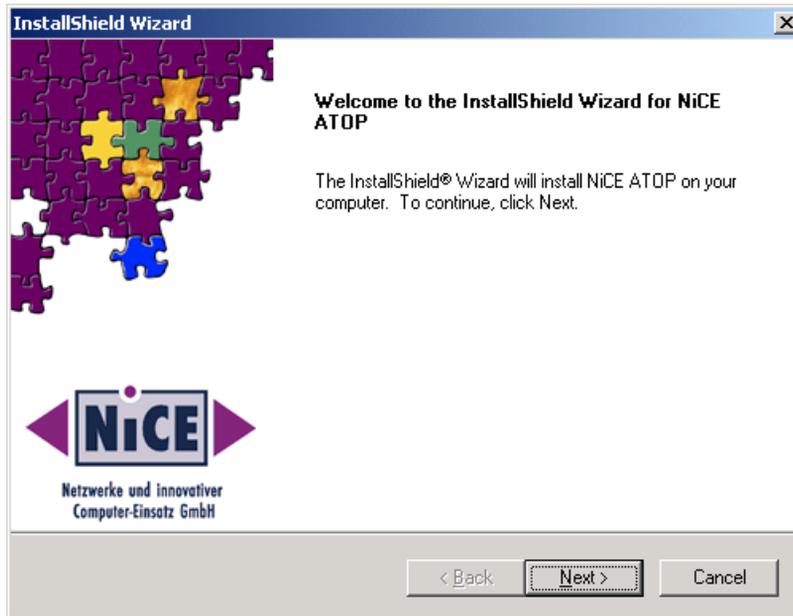
The installation package **ATOP_Setup.exe** may either be obtained from the web page at

`http://<OMUServer>:3443/ITO_OP/ATOP/`

Execute **ATOP_Setup.exe** and follow the instructions given during the InstallShield guided setup.

You have to accept the license agreement to continue when asked for. However, ATOP usage is covered by the license of the DB2SPI itself.

Figure 5: InstallShield window to set up ATOP on your PC



We are installing the ATOP Java GUI in the same branch as the OM for UNIX Java GUI to indicate the strong relation between them. You cannot operate ATOP without the OM for UNIX Java GUI.

Upon completion of the installation, a final screen showing the success of the installation is displayed.

Verifying ATOP Installation on Windows

In Microsoft Windows environments, an ATOP Server is added to the system, which needs to be started before trying to open any ATOP windows. It acts as the communication access point for applications requesting input/output on the Java GUI station.

For ease of access, a shortcut has been installed on the Windows Desktop. Double-clicking it will start the ATOP Server that may be left running, since it uses only very little resources.

ATOP Configuration Files

The ATOP configuration is stored in the configuration files `atop.cfg` on the managed nodes and `atopsrv.cfg` on the management server.

The file **`atopsrv.cfg`** is found on the management server in the directories:

HP OM for Windows	<code>%OvInstallDir%\bin\DB2SPI</code>
HP OM for Unix or Linux	<code>/opt/OV/atop/bin</code>

For deployment to the managed nodes, copies of **`atop.cfg`** are kept on the management server in all supported platform-specific directories for the managed nodes:

HP OM for Windows	<code>%OvSharedDir%\Instrumentation\Categories\DB2SPI</code>
HP OM for Unix or Linux	<code>/var/opt/OV/share/databases/OpC/mgd_node/Instrumentation/DB2SPI/</code>

On Microsoft Windows display stations running the Java GUI (related to HP OM for UNIX or Linux), or OM for Windows management consoles, the file can be found in

```
\Program Files\HP OpenView\bin\DB2SPI
```

Note: Whenever changes need to be made to the ATOP configuration file, especially regarding the port information, this must be re-distributed to the managed nodes and display stations.

Default Settings and their Modification

The default configuration of ATOP consists of the following settings:

```
-----  
# -----  
-  
# Configuration file for ATOP2 server 'atopsrv'.  
#  
# -----  
-  
  
ATOP_CFG_LOGLEVEL      = 3  
ATOP_CFG_SERVERPORT    = 55551  
ATOP_CFG_CLIENTPORT    = 0  
ATOP_CFG_LANGUAGE      = us  
ATOP_CFG_QUEUELEN      = 10  
-----
```

There is one important field, the **ATOP_SERVERPORT**, which acts as the key for all successful communication between the managed nodes and the display stations. This port must be enabled in the IP network connecting the systems.

If the predefined port 55551 should not be suitable for your environment, please change the configuration on the management server and make sure to distribute it to all nodes in the management domain (managed nodes using ATOP, Java GUI display stations, and OM for Windows consoles) as described next.

A simple way to make consistent changes this is the Perl script `db2s_atopcfg-pl`, as explained in section “ATOP Configuration and Distribution Tool”.

ATOP Configuration and Distribution Tool

The script was designed for two cases:

- 1 Change atop configuration file. Editing happens via program parameters. In case there was an issue during execution, the user has to call the program a second time.

- 2 Distribution of the source atop configuration file on the management server to the node directories on the management server (they still need to be deployed).

How to start the script

The script can be executed in the command line/in a shell using the start script on the HP OM Management Server from the SPI installation directory to provide the interactive mode:

HP OM for Windows	<code>%OvInstallDir%\bin\db2spi\db2s_start.bat db2s_atopcfg.pl [<parameter>]</code>
HP OM for Unix or Linux	<code>/opt/OV/db2spi/bin/db2s_start db2s_atopcfg.pl [<parameter>]</code>

Parameter list:

- ll** followed by a number to change the loglevel (number between 0 and 6 expected)
- sp** followed by a number to change the server port (number greater than or equal to 0 expected)
- cp** followed by a number to change the client port (number greater than or equal to 0 expected)
- q** will simply distribute the atop.cfg quietly

Starting the script with the parameters “-ll”, “-sp” and/or “-cp” will change the ATOP configuration file and then distributed to the node directories.

Starting the tool without parameters will distribute the configuration.

Keep in mind that the ATOP configuration file needs still to be deployed to the managed nodes and maybe to the HO OM management consoles.

Known Issue

Symptom

The script db2s_atopcfg.pl is not supported on Windows 2008.

Workaround

Due to some redirection and user right issues, the script is not available. Instead all instances of atop.cfg and atopsrv.cfg need to be changed manually and deployed as described before.

8 Appendix D: Removing Policies in HP OM

This is only a short reminder and NOT meant to replace any HP OM documentation!

Policy Removal in Operations Manager for Windows

To remove the policies from the managed nodes, following these steps:

- 1 On the management console, right-click the DB2SPI policy group to be removed (e.g. "DB2SPI").
- 2 Select the function "All Tasks → Uninstall from ..." and choose the node group or node desired (e.g. "DB2")

This removes all policies from the nodes that belong to those node groups.

Also remove the DB2SPI_ownlog0 policy from the Management Server node.

- 3 Remove the managed nodes from the DB2 node groups

Another possible way to remove the policies from the managed nodes is as follows:

- 4 Open the Node Configuration Editor on the management server
- 5 Drag all nodes from the DB2 node groups to the root node group "Nodes"
- 6 Close the Node Configuration Editor
- 7 Mark each node and select the function "All Tasks → Redeploy policies and Instrumentation"

Policy Removal in Operations Manager for UNIX or Linux

To remove the DB2SPI policies from the managed nodes, you enter the OM administration GUI and perform the following steps:

- 1 Delete all nodes from the DB2 node groups
- 2 Re-deploy policies and instrumentation (aka. actions, commands, monitors) to those nodes