IBM Insight for SAP R/3

Version 4.0 - Process and Report Overview

The IBM Insight for SAP R/3 program and report are designed to provide a convenient, high-level workload analysis for a production R/3 system.

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Advanced Technical Support

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IBM

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General

Edition Notice (December 2005)

This is the second edition of this document. This document and other related documents can be obtained from the IBM/SAP Web Page on IBM's Internet at:

http://www.ibm.com/erp/sap/insight

Scope

This document is written for Customers and IBM personnel involved in the installation, configuration and use of IBM Insight for SAP R/3 (henceforth referred to as Insight). This document includes more detail than what is provided in Q&A and README documentation. The purpose of this document is to provide an experienced SAP BASIS specialist with additional information about the features of Insight.

Acknowledgments

The author would like to graciously acknowledge the work of Jim Dilley, who took the time to review, critique, and contribute to the contents of this document.

Feedback

Please send feedback to: joustale@us.ibm.com

Introduction

"IBM Insight for SAP R/3" is a free service offering provided by IBM's ATS and Techline.

Insight has been validated to run against production SAP R/3 complexes comprised of Wintel (xSeries), AIX (pSeries), OS/400 (iSeries), OS/390 (zSeries), and non-IBM UNIX® and Wintel servers.

The Insight software is packaged in a Microsoft® Windows 2000 SP3 and Microsoft ® Windows XP install image, ready for installation on any customer's Windows/Intel® PC networked to communicate with a production SAP R/3 system.

Insight uses SAP's remote function call (RFC) library to collect data from a target SAP R/3 system. It is designed to run with minimal impact on the target SAP R/3 system.

This document is segmented into sections that follow the actual data collection and reporting process. The major sections are:

- Data Collection.
- Report Generation.
- Report Overview.

The Data Collection section contains information on the installation and usage of the Insight Collector and Reducer.

The Report Generation section contains information on the installation and usage of the Insight Reporter.

The Report Overview section presents and explains charts and tables provided in the Insight Report.

Data Collection

Overview of Process:

Installed and run by the customer, the Insight Collector captures workload and performance statistics generated by a production SAP system. The captured statistics are written to the hard drive of the Windows PC dedicated for the collection process. When the collection process is complete, the customer runs the Insight Reducer to verify, compress, and send the data to IBM Techline for report generation. IBM Techline will send a generated report to the customer detailing the production SAP system's workload and utilization.

It is recommended that you collect at least one to three days of statistics during a peak period to improve the quality and value of the report.

Insight Collector & Reducer

- Designed to have a minimal impact on a production SAP system.
- No transports into the SAP system are required.
- No third-party software is required.

The Insight Collector and the Insight Reducer are packaged together in the InstallShield installer, SetupInsight4.exe. The software is designed to be easily removed using the Windows Control Panel applet, "Add or Remove Programs".

Software Installation:

PERSONAL COMPUTER REQUIREMENTS:

- ✓ An IBM-compatible PC with at least a 500 MHz Pentium processor and 64 MB of RAM.
- ✓ Installation of Windows 2000 SP3 or XP operating system.
- ✓ For Windows 2000: Set the total virtual memory (physical memory + paging file) to a minimum of 128MB.
- ✓ At least 1GB of free disk space.
- ✓ Network adapter, LAN attached with direct TCP/IP access to all production servers (except for a standalone database server).
- ✓ The TCP/IP address of all server short host names (as seen in SM51) must be resolved by either "hosts" file entries, or DNS with a consistent, fully qualified domain.
- ✓ The PC must be powered on during the entire data collection process.
- ✓ Disable the PC's power management (suspend) during the collection process.

SAP REQUIREMENTS:

- ✓ SAP releases 3.0D and higher.
- ✓ The SAP Operating System collector (saposcol) must be setup and running on all application servers in the target system.
- ✓ If the database is on a standalone server (no SAP instance), saposcol and rfcoscol/sapccmsr must be installed and working. Also, an RFC destination (TCP/IP connection in SM59) must be configured to access rfcoscol/sapccmsr from a gateway instance. This RFC destination is entered when prompted with the "Standalone Database Server(s)" dialog box.
- ✓ SAP statistics recording must be enabled (profile parameter: stat/level = 1).
- ✓ A SAP user ID of type CPIC (System) must be created and assigned a profile (e.g. Z:INSIGHT) with the following authorizations:

  S_ADMI_FCD(S_SACHBEARB)

  S_C_FUNCT(S_C_FUNCT_AL)

  S_DATASET(S_DATASET_AL)

  S_LOG_COM(S_LOGCOM_ALL)

  S_RFC(S_RFC_ALL)

  S_RZL_ADM(S_RZL_SHOW)

Detailed Insight User Authorizations:

S_ADMI_FCD

System administration function	SM21, ST0R

S_RZL_ADM

Activity	03

S_C_FUNCT

ABAP Program Name	*
Activity	16
Name of a callable C routine	*

S_DATASET

ABAP Program Name	*
Activity	33
Physical file name	*

S_LOG_COM

Logical command name	TABLESPACE_INFO
Name of Application Server	*
Operating System of App Server	ANYOS

S_RFC

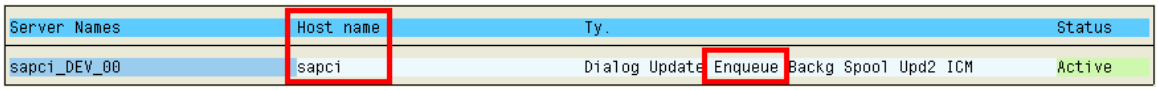
Activity	16
Name of RFC to be protected	
CADR, DB02_DB2, DB6M, OCSI, PERF_TRA_DIA, RFC1, RFCH, SMON, SPFL, SRFC, STD1, STD4, STU4, STUB, STUN, STUW, SUSE, SUSR, SYST, THFB	
Type of RFC object to be protected	FUGR

Requirement Checks:

Host name resolution:

List Host Names

Using SAPGUI, logon to SAP and execute transaction "SM51".



Server Names	Host name	Ty.				Status
sapci_DEV_00	sapci	Dialog	Update	Enqueue	Backg Spool Upd2 ICM	Active

The middle column, labeled "Host name", lists all the host names that must be resolved at the PC.

While on the "SM51" screen, note the third column labeled "Type", and identify the instance that is running "Enqueue", this will be the host name of the central instance (the host name of the central instance will be needed for initial logon).

Using Domain Name Service

If using DNS, ping each host with name and domain from the PC command prompt.

Example: C:\> ping sapci.yourcompany.com

Using the Windows "hosts" file

If not using DNS, the Windows "hosts" file must be maintained. For Windows 2000 or XP, the file is located in the \windows\system32\drivers\etc directory. If no "hosts" file is found, there is usually a sample "hosts.sam" file, which can be copied to "hosts" and then edited. Edit this file and verify that all the server names listed in SM51 and their corresponding TCP/IP addresses are in this file. From the PC command prompt, ping each host name.

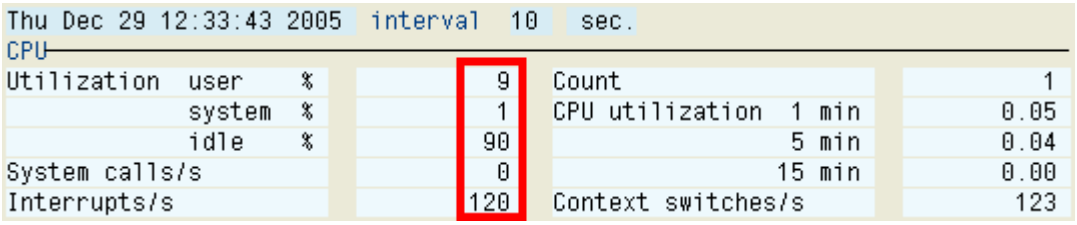
Example: C:\> ping sapci.

SAPOSCOL

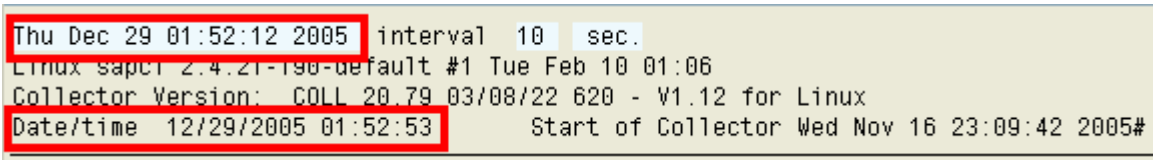
Using SAPGUI, logon to SAP and execute transaction "SM51".

Verify that the SAP operating system collector (saposcol) is running on each server (application and database). This can be done in the following manner.

For each application server, highlight a server name and press the "OS collector" button, or select "Goto -> OS Monitor". Verify that some non-zero statistics are returned.



Next, press the "Operating System Collector" button. Verify that the system time and the saposcol time are within 13 hours of each other.

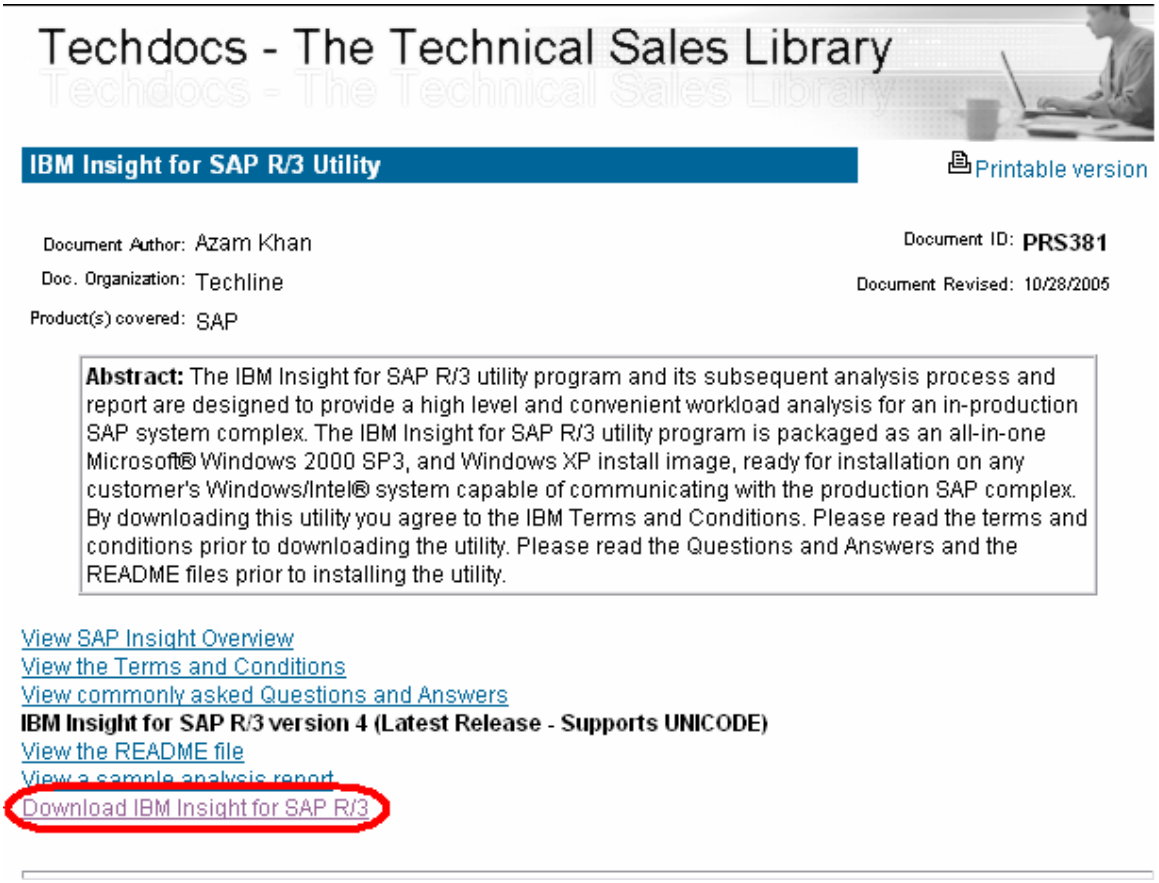


For a standalone database server, execute transaction OS07. Select the appropriate RFC destination. Verify that some non-zero statistics are returned.

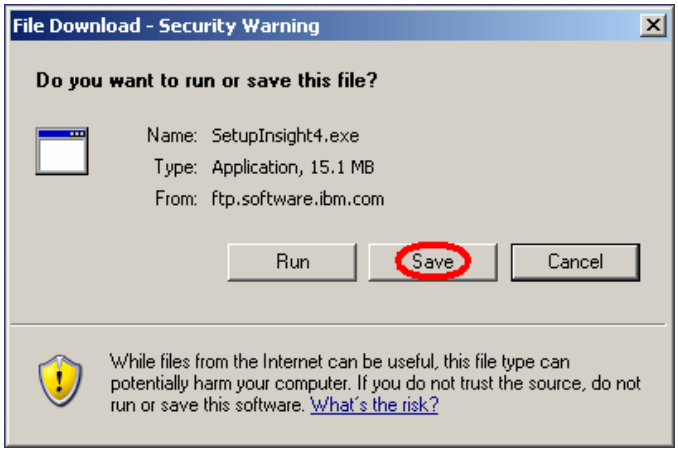
DOWNLOAD THE INSTALLER:

Step 1: Using a web browser, go to URL:

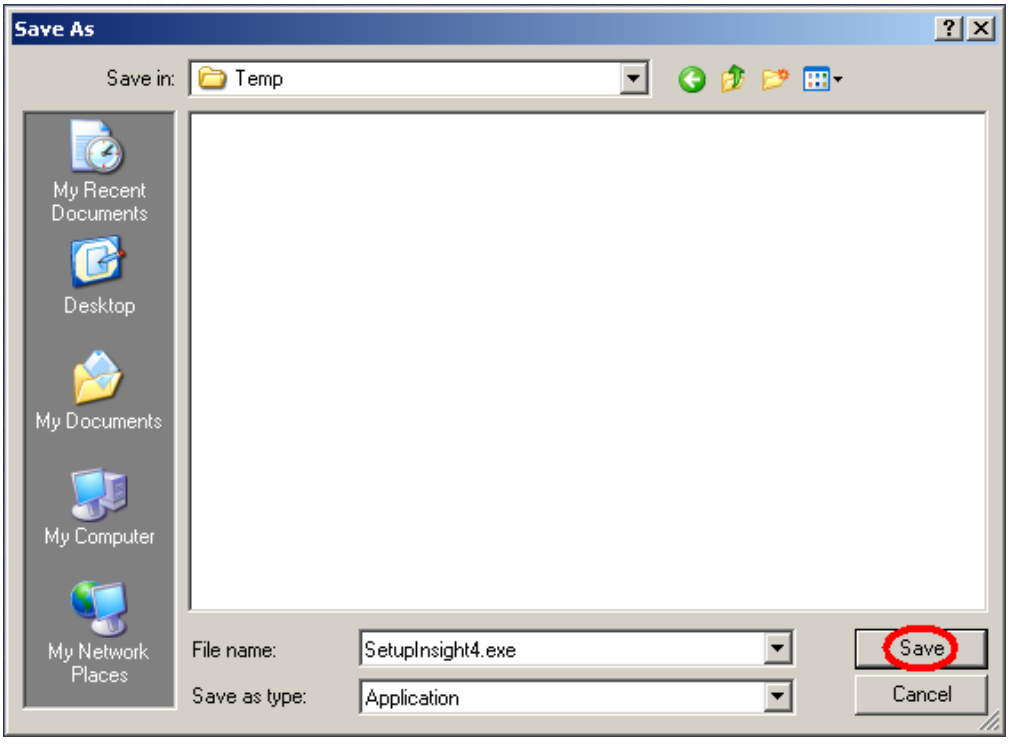
http://www.ibm.com/erp/sap/insight



Step 2: Select the link Download IBM Insight for SAP R/3 to start the file transfer.



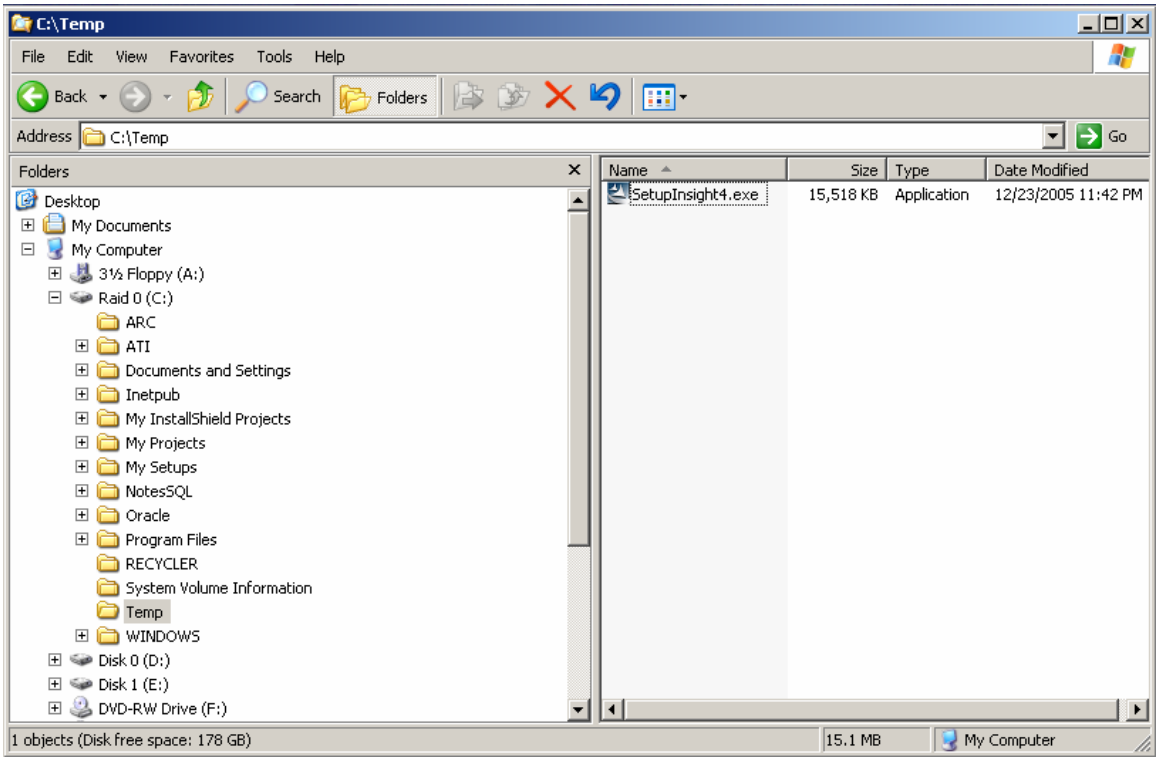
Step 3: Press the "Save" button to download the installer file "SetupInsight4.exe" to the disk drive of the PC.



Step 4: Specify the target directory for the download and press the "Save" button.

RUN THE INSTALLER:

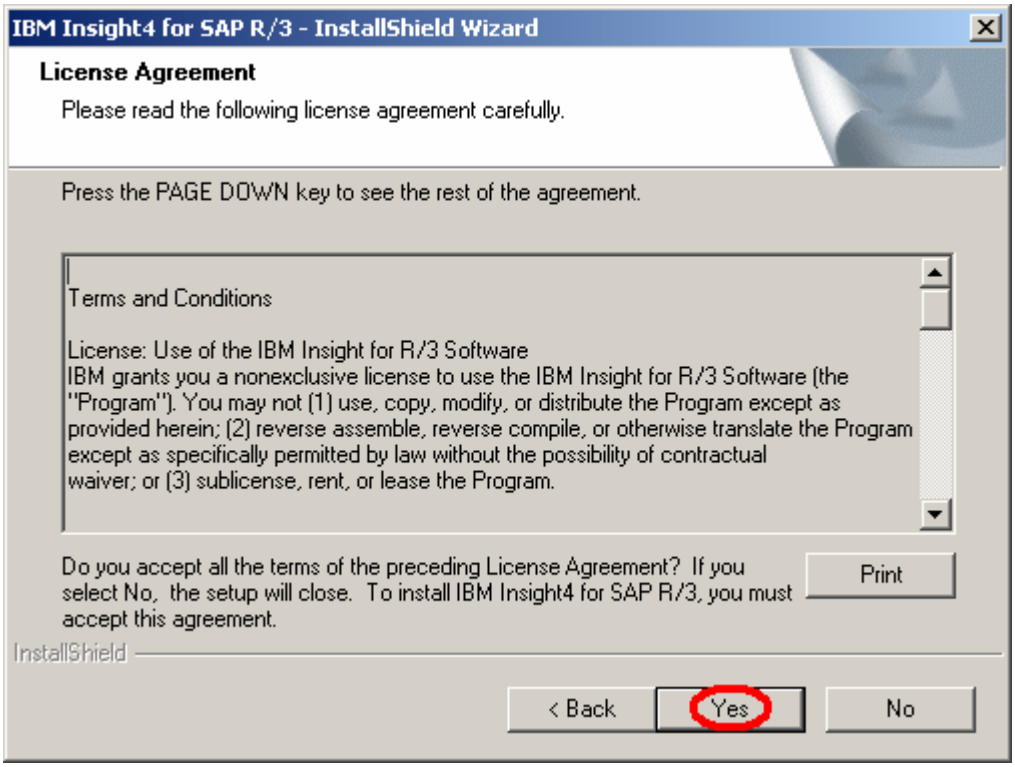
Step 1: Using Windows Explorer, go to the target directory of the download.



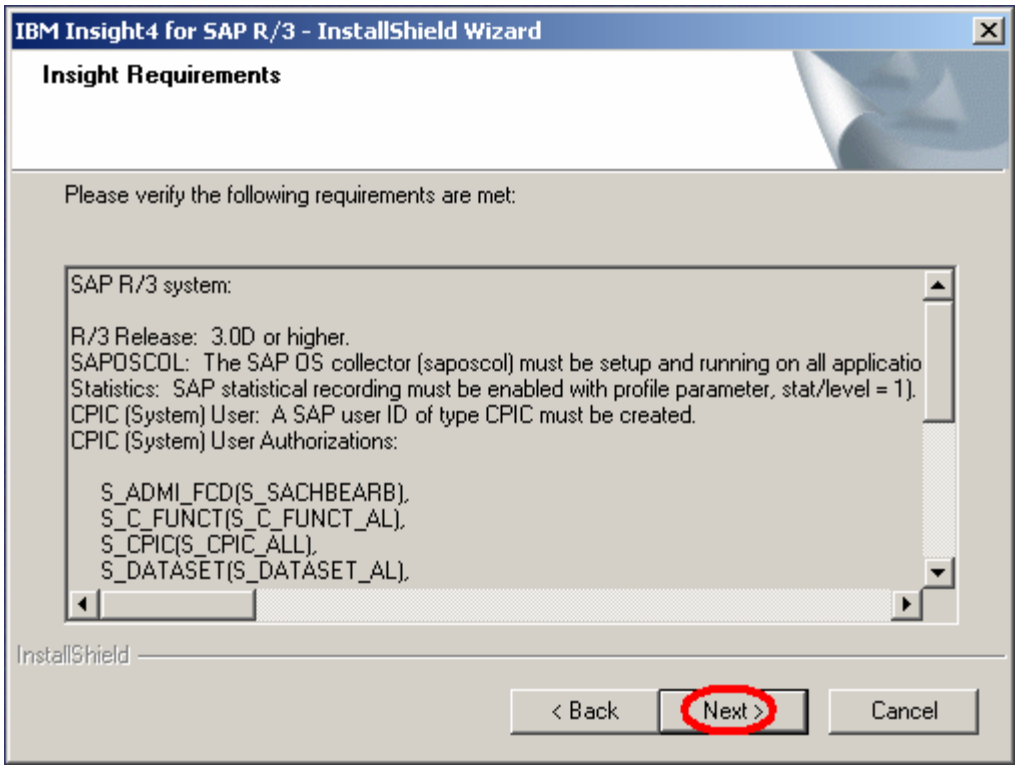
Step 2: Double-click the file "SetupInsight4.exe" to launch the installer.

Step 3: If presented with a Windows Security Warning, select "Run" to continue and run the installer.

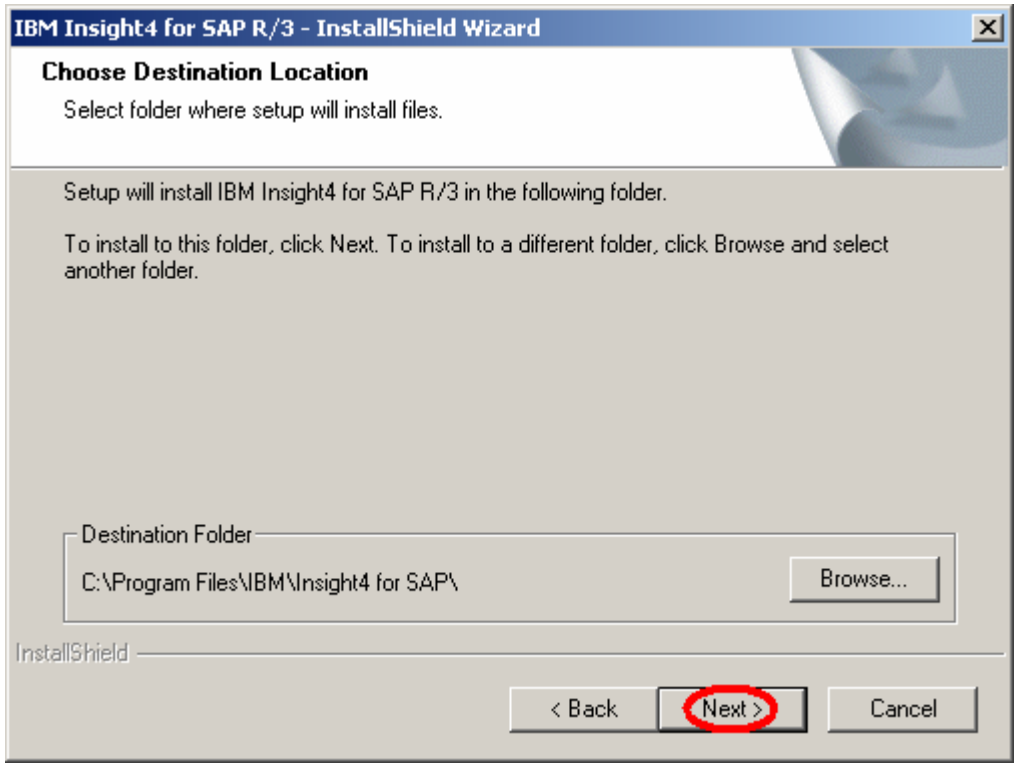
Step 4: When the InstallShield Wizard presents the Welcome Screen, press the "Next" button to continue.



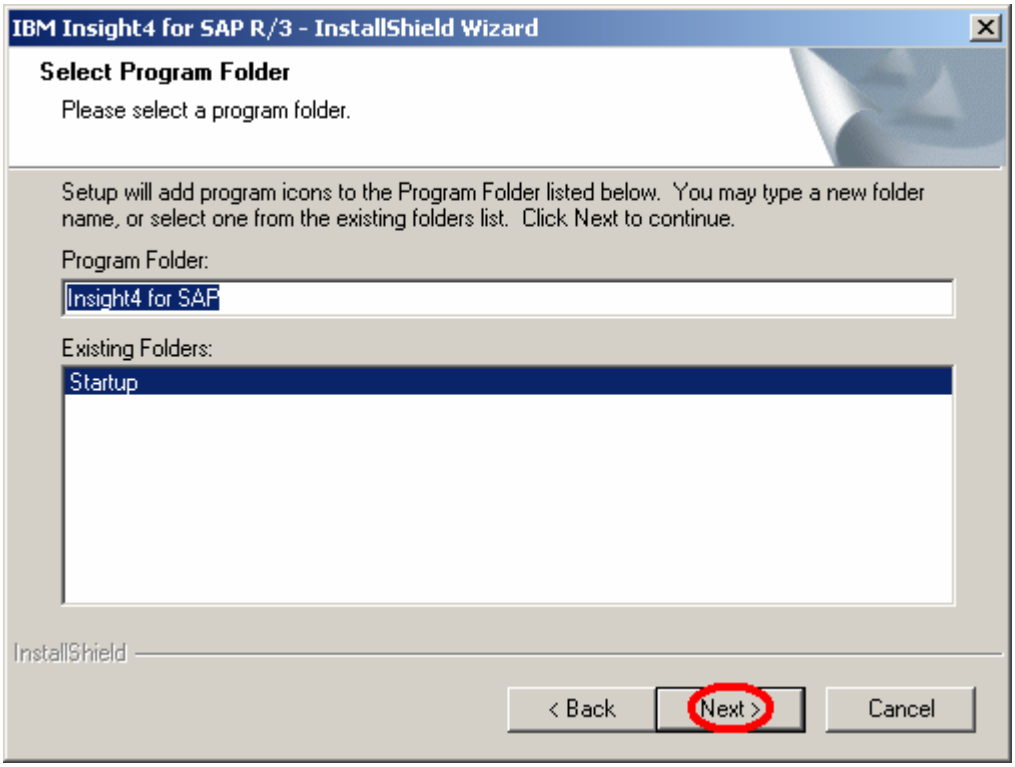
Step 5: Press the "Yes" button to accept the Terms and Conditions of the License Agreement.



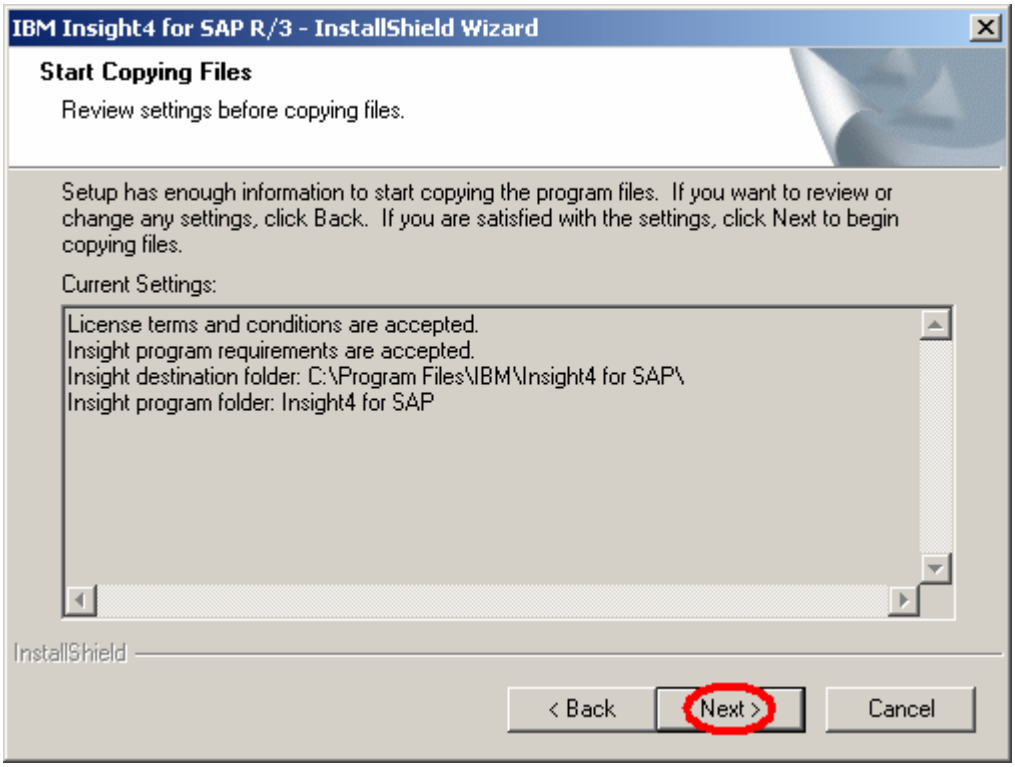
Step 6: Read the Insight requirements and press the "Next" button to continue.



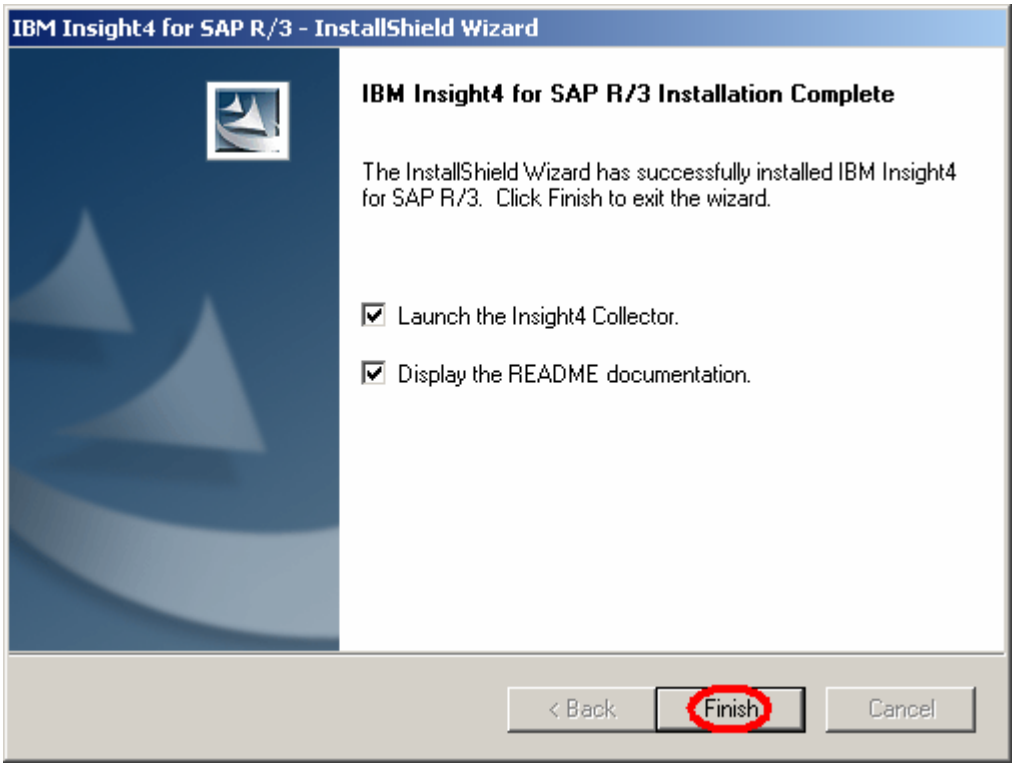
Step 7: Accept the default destination folder (recommended) or press the "Browse" button to specify a different folder. Press the "Next" button to continue.



Step 8: Accept the default program folder (recommended), or specify a different program folder in the "Program Folder" edit box, or select a program folder from the "Existing Folders" list box. Press the "Next" button to continue.



Step 9: Read the list of current settings and press the "Next" button to start copying the Insight program files to the destination folder.

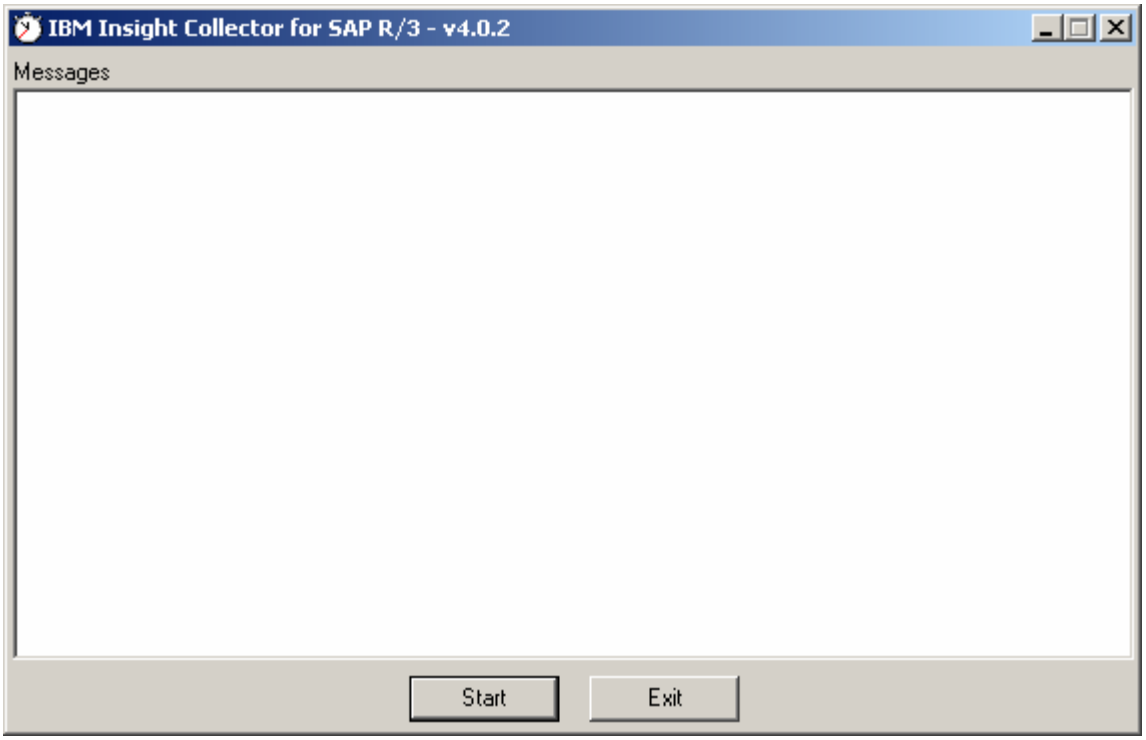


Step 10: Check/uncheck the box to launch the Insight Collector when the installation is complete. Check/uncheck the box to display the README file when the installation is complete. Press the "Finish" button to complete the installation.

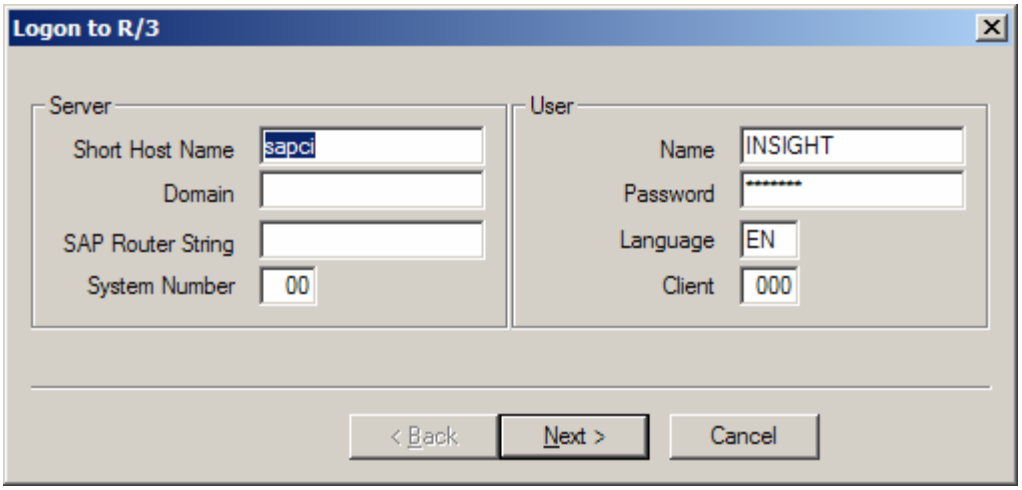
Insight Collector

RUN THE COLLECTOR:

Step 1: Launch the Insight Collector from the Windows Start menu, select Programs -> Insight4 for SAP -> Collector4.



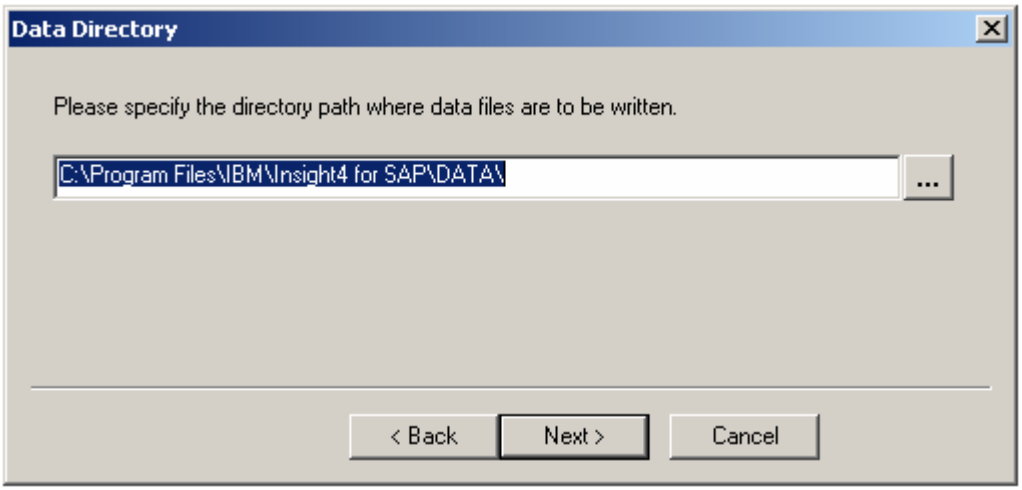
Step 2: Press the "Start" button to launch information wizard.



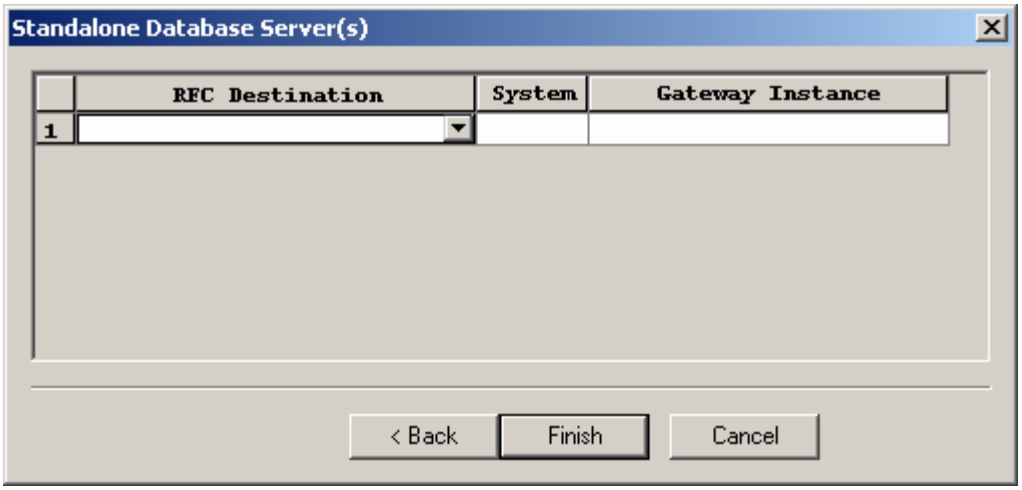
Step 3: Enter R/3 logon information.

- ✓ Enter the short hostname of the central R/3 instance as listed in transaction SM51 (ex: sapci). Do not enter an IP address or a domain suffix.
- ✓ If using Domain Name Service (DNS), enter your company's domain (ex: yourcompany.com).
- ✓ If required, enter a SAP Router string.
- ✓ Enter the central instance system number (ex: 00).
- ✓ Enter the client number where the Insight user has been created.
- ✓ Enter the Insight user name, password, and language (ex: INSIGHT, IBM, EN).

Press the "Next" button to connect to R/3.



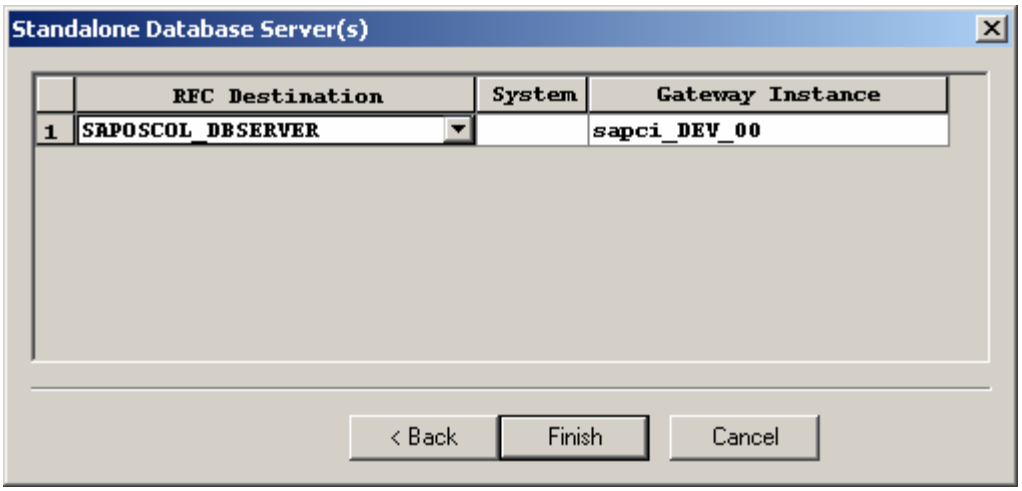
Step 4: Accept the default data directory (recommended), or specify the directory where the Insight data files are to be written. Press the "Next" button to continue.



Step 5: Specify Standalone Database Server(s)

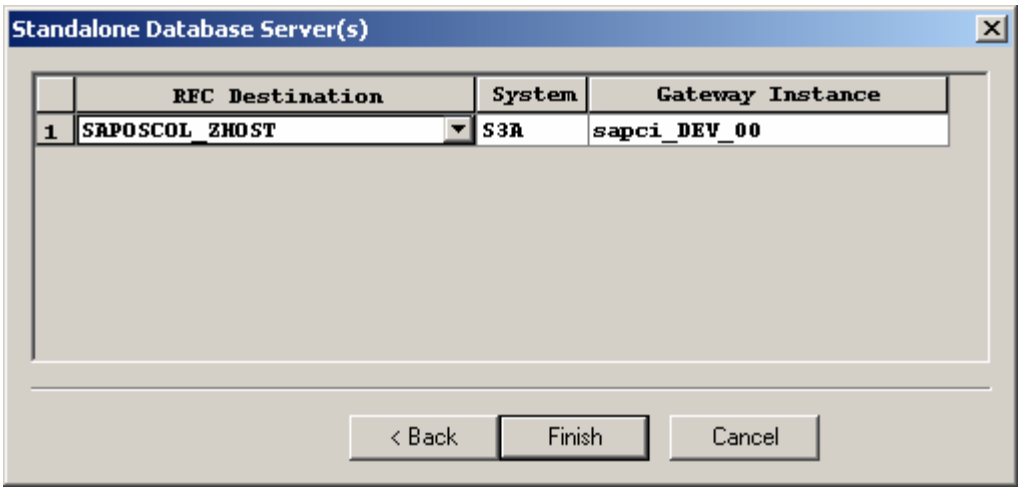
Note: If the database and the R/3 central instance are on the same host, the database is not on a standalone server. No entries are required. Leave the grid blank and press the "Finish" button to begin data collection.

Example 1: Database and Central Instance are on different hosts.



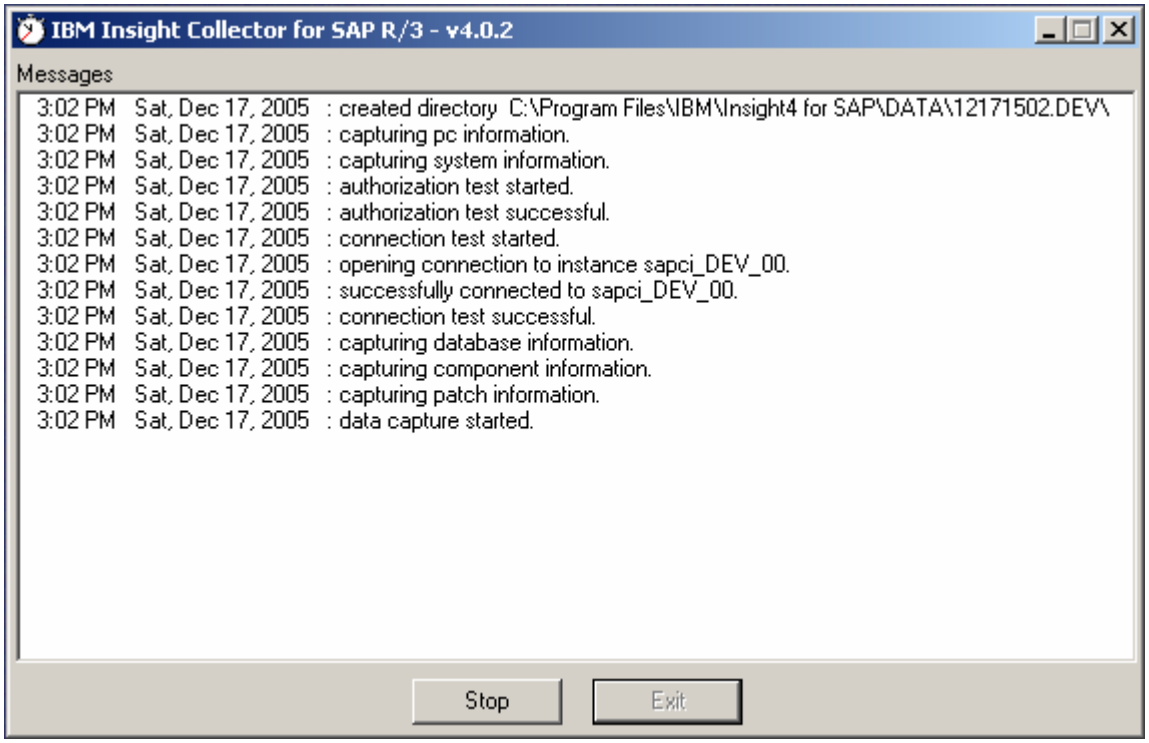
The database is on a standalone server, enter the database RFC destination defined in SM59 and the gateway instance. No system name is required; leave the "System" field blank.

Example 2: Database and Central Instance are on different hosts with SAPOSCOL in Sysplex.



The database is on a standalone server, enter the database RFC destination defined in SM59, the Sysplex system name, and the gateway instance.

Press the “Finish” button to begin data collection.



The Insight Collector is now running and will capture performance statistics every minute. Status messages will scroll in the Collector's "Messages" window.

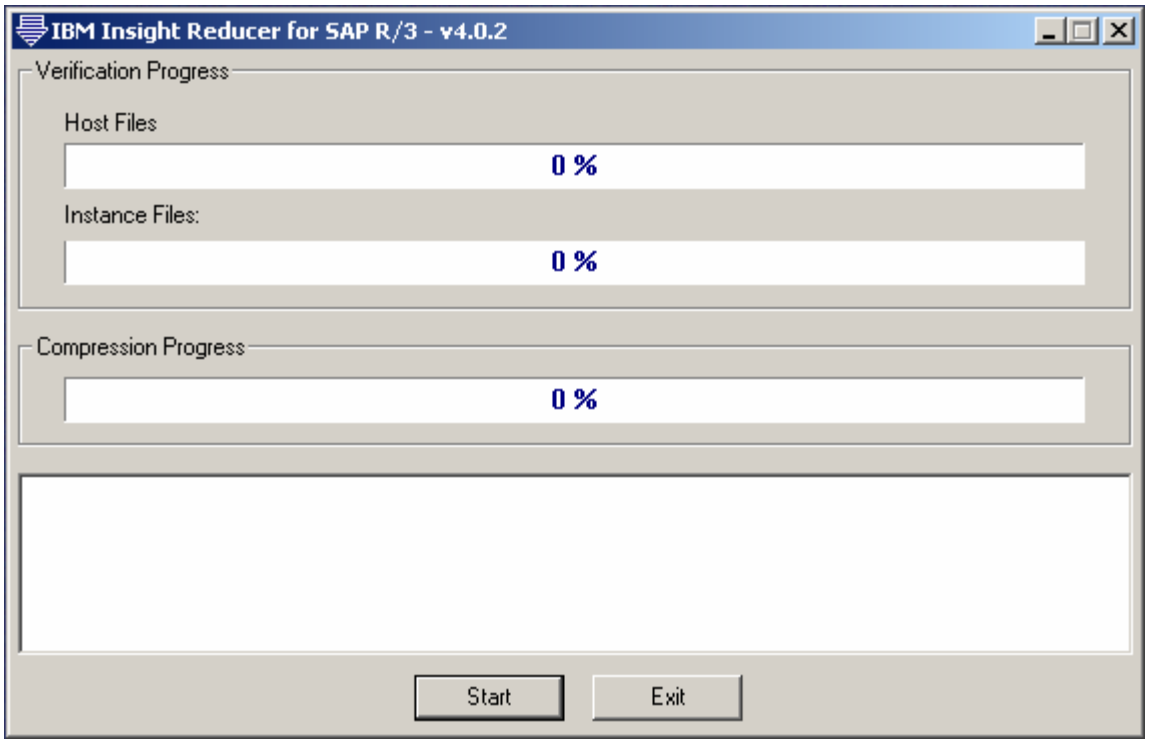
Step 7: After one to three days of data collection, stop the Insight Collector by pressing the "Stop" button.

Insight Reducer

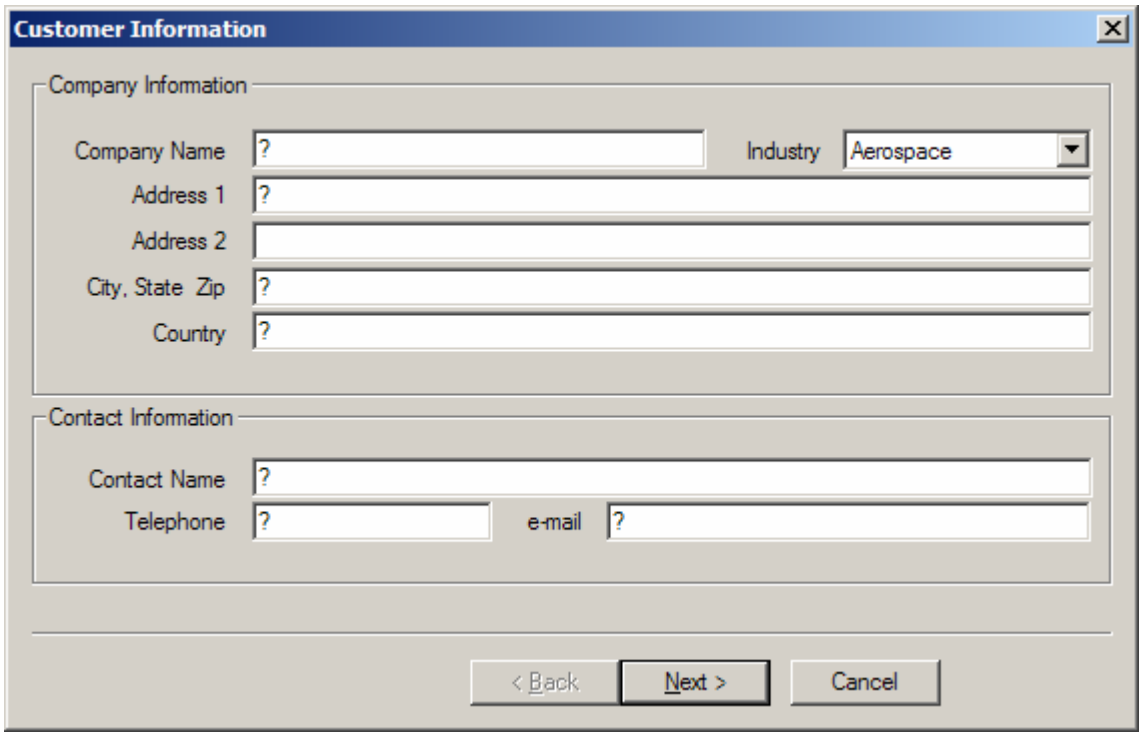
RUN THE REDUCER:

Step 1: Verify that the Insight Collector has been stopped.

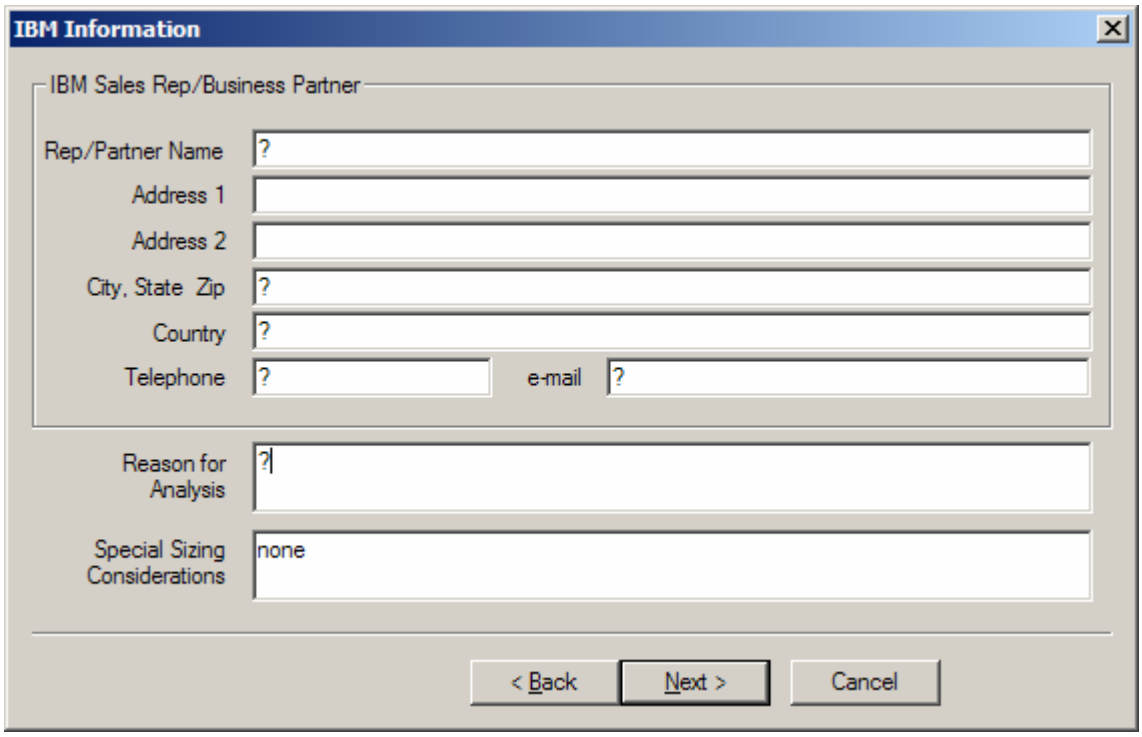
Step 2: Launch the Insight Reducer from the Windows Start menu, select Programs -> Insight4 for SAP -> Reducer4.



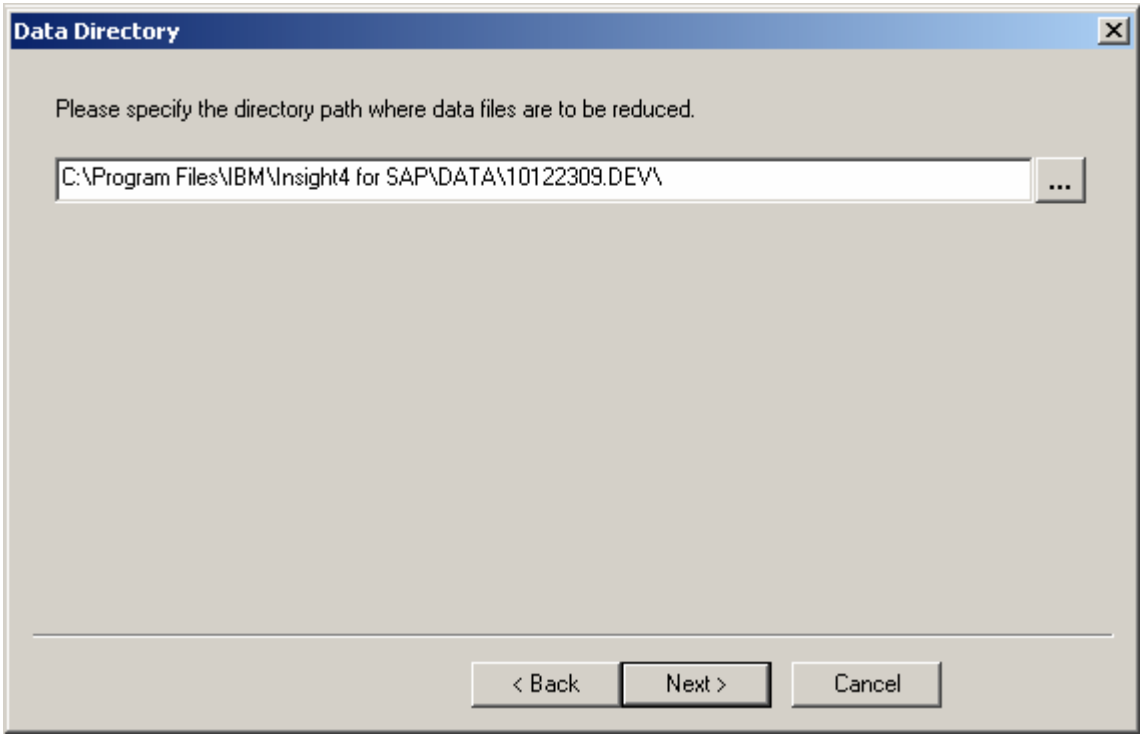
Step 3: Press the "Start" button to launch the information wizard.



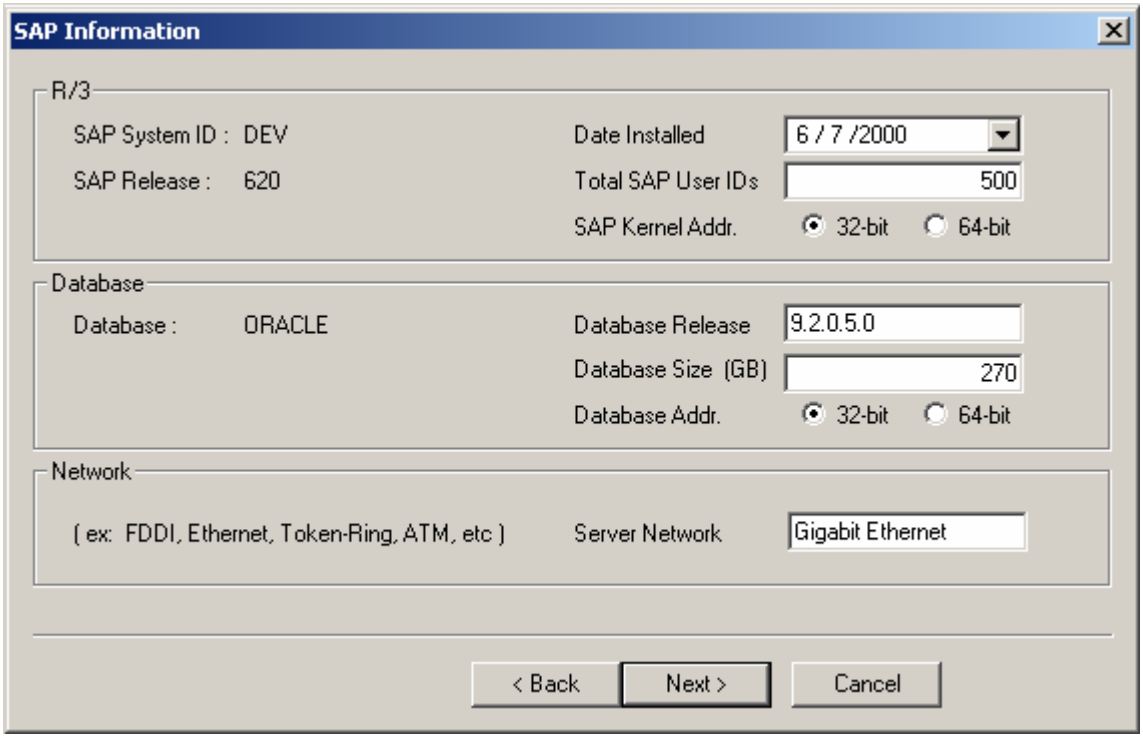
Step 4: Enter Company and Contact information. Fields with a question mark (?) are required. Press the "Next" button to continue.



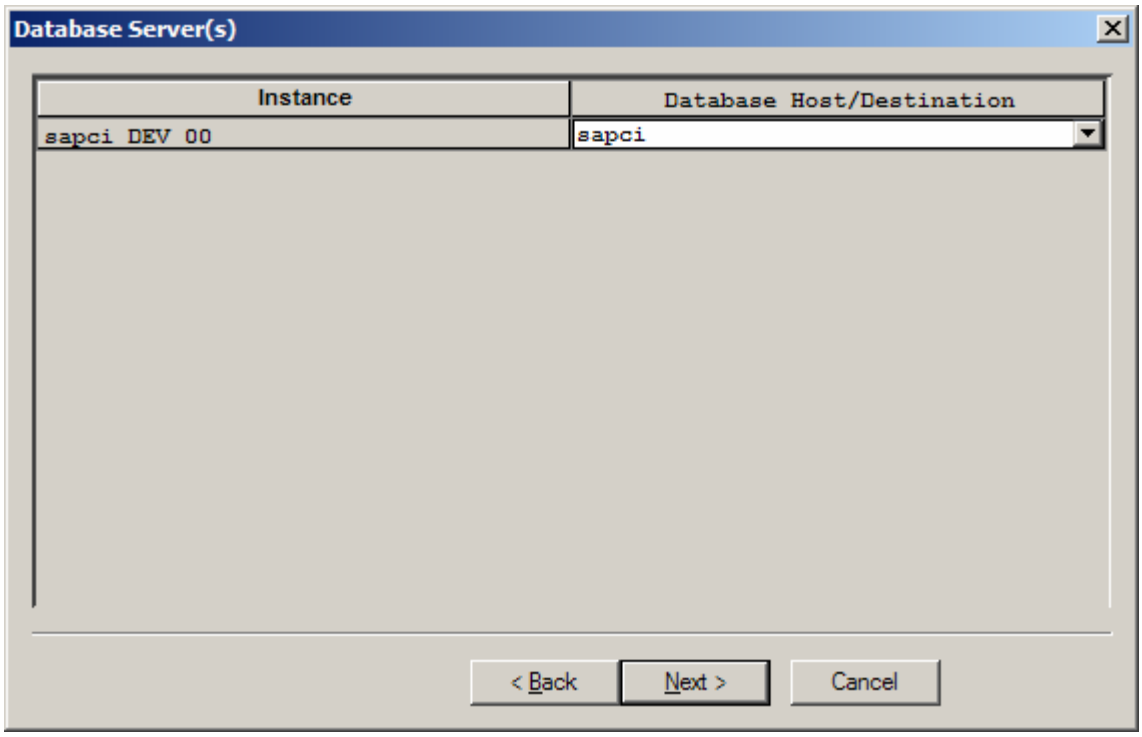
Step 5: Enter IBM Sales Rep or Business Partner information. Fields with a question mark (?) are required. Press the "Next" button to continue.



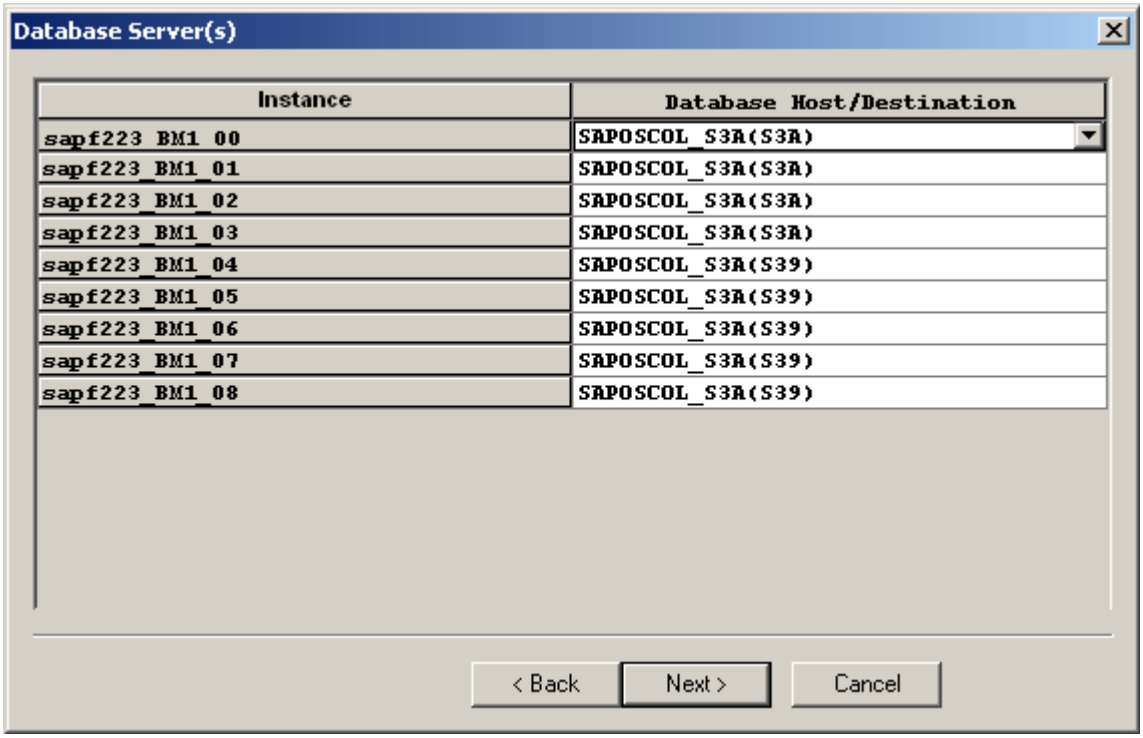
Step 6: Specify the directory path where the Insight data files were written by the Collector. Press the "Next" button to continue.



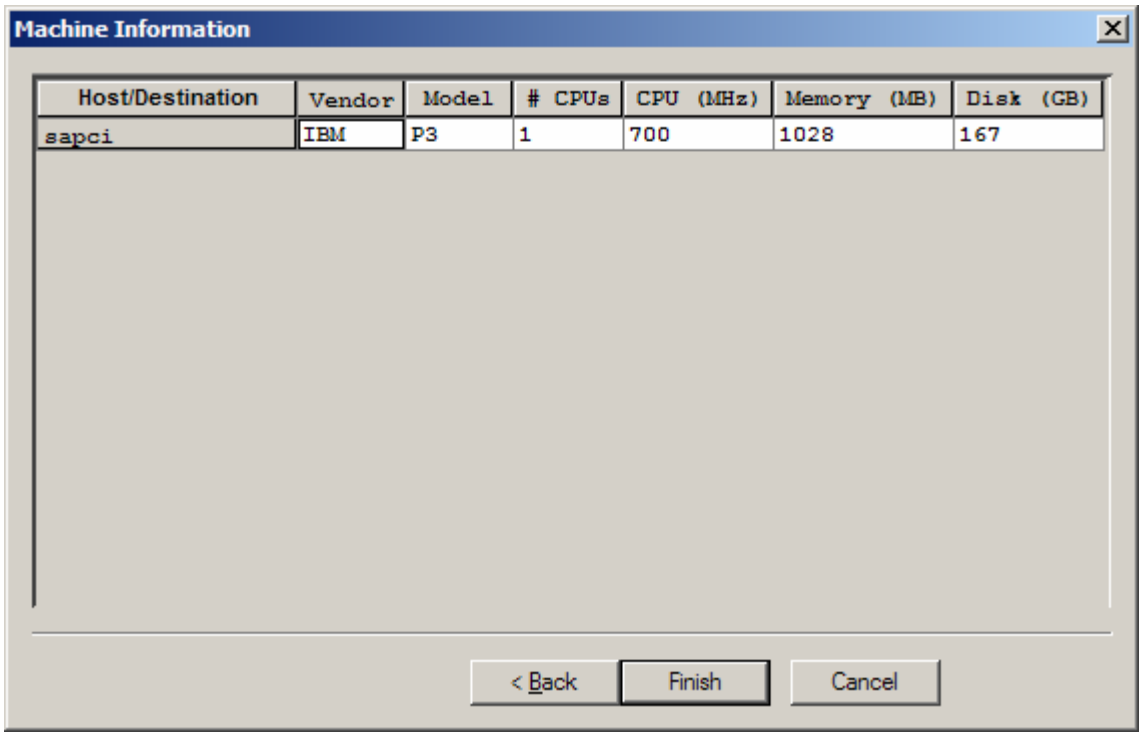
Step 7: Enter and verify SAP installation information. Press the "Next" button to continue.



Step 8: Using the drop-down list box, specify the database server host name or RFC destination for each R/3 instance. Press the "Next" button to continue.

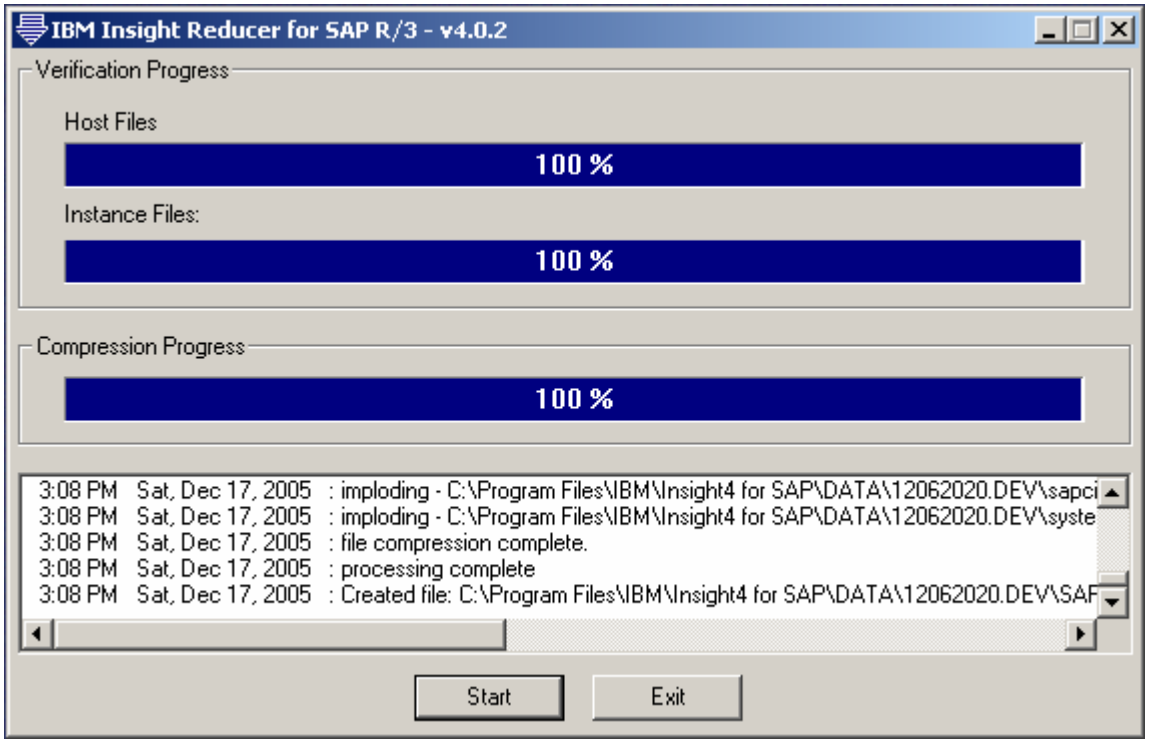


Example: Database and Central Instance are on different hosts with SAPOSCOL in Sysplex.

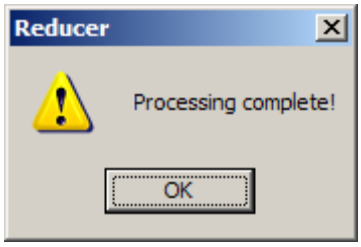


Step 9: Enter and verify host machine information.

Press the "Finish" button to begin the data reduction.



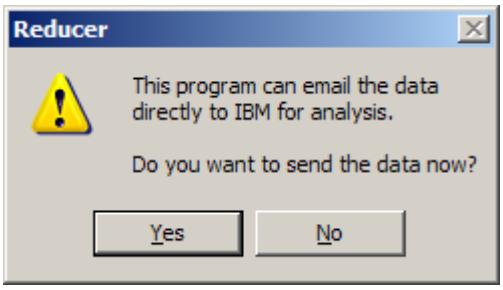
The reduction and compression processing will now run. Processing can be cancelled at anytime by pressing the "Stop" button.



Step 10: When the reduction and compression processing are complete, you will be prompted with a message box.

Press the "OK" button.

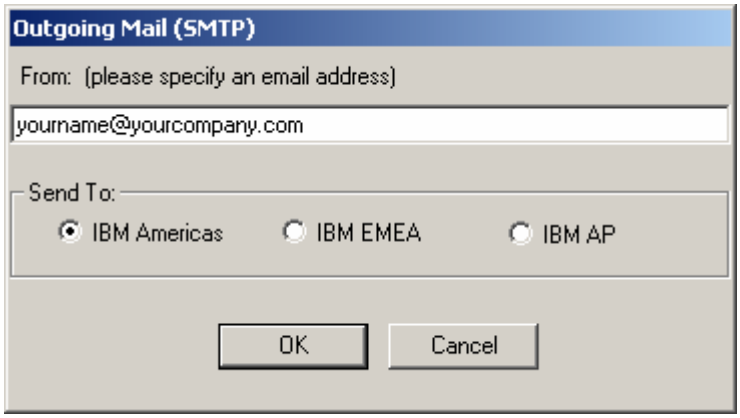
SEND THE INSIGHT DATA TO IBM:



Step 11: Next you will be given the option to send an email with the Insight data attached for analysis directly to IBM.

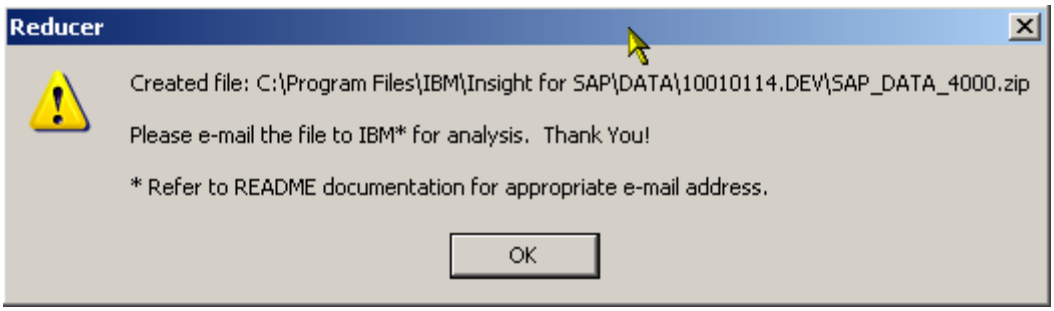
Installation of email software on the PC is not required to send the data. (ex: Microsoft Outlook, Lotus Notes, etc)

If you press the "Yes" button, you will be presented with the following dialog:



Enter your company contact's email address. Select the appropriate IBM destination. Press the "OK" button to send the email.

If you don't want to send the email directly, press the "No" button, and you will be presented with the following message box:



The actual path of the Insight ZIP file will depend upon your installation, data, and session directories.

Note for North and South America: If your Insight ZIP file (SAP_DATA_xxxx.ZIP) is greater than 5 MB in size then please send a note to IBMERP@US.IBM.COM with words "Insight Data FTP Help Required" in the subject line and we will grant you access to our FTP server for Insight data upload. Please provide your name, phone number and email address in the note and we will contact you right away.

Using an email program, create a new mail with the following subject line:

Subject: Insight4 data for <company name>

Complete the following mail body:

Company :
Country :
SAP SID :
Start : <date> <time>
End : <date> <time>
Contact :
Telephone :
email :
Rep/Partner :
Telephone :
email :
Reason :
Considerations :

Attach the ZIP file and send it to the appropriate Techline address:

IBM Americas (North and South America)	ibmerp@us.ibm.com
IBM EMEA (Europe, Middle East, and Africa)	erpemea@it.ibm.com
IBM Asia/Pacific	TLsizing@jp.ibm.com

Report Generation

Overview of Process:

Installed and run by a Techline specialist, the Insight Reporter reads a customer's Insight dataset and generates a report in Adobe's Portable Document Format (PDF).

The Techline specialist receives the customer's Insight dataset by email or FTP as a ZIP file. The specialist unzips the file to temporary directory on the disk drive of the Windows PC running the Insight Reporter.

The Insight Reporter

1. Reads the Insight dataset into memory.
2. Generates the Insight report.
3. Prints to the Acrobat Distiller producing a PDF file.
4. Updates the Insight Report Database.

The Techline specialist will then send the generated report to the customer detailing the production SAP system's workload and utilization.

The Insight Reporter is packaged in the InstallShield installer, SetupReportert4.exe. The software is designed to be easily removed using the Windows Control Panel applet, "Add or Remove Programs".

Insight Reporter

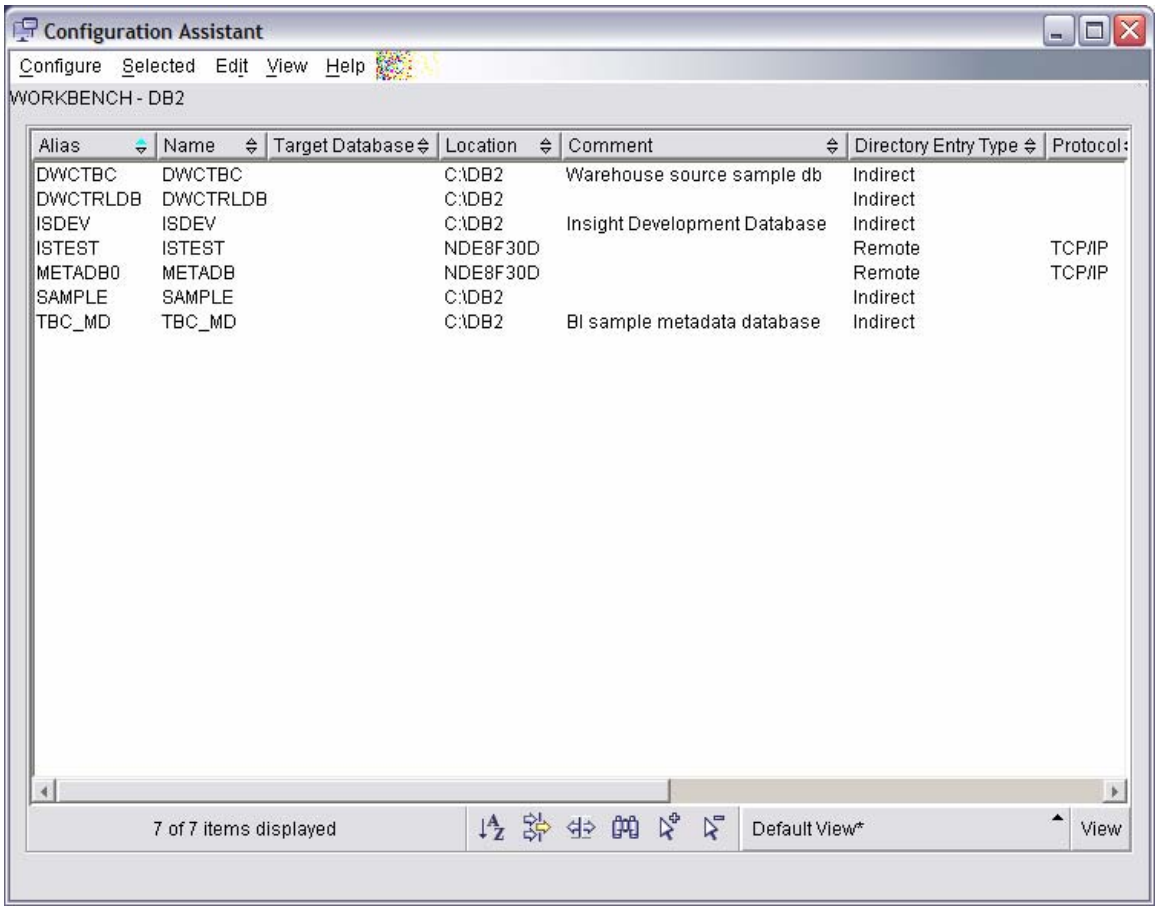
PERSONAL COMPUTER REQUIREMENTS:

- ✓ IBM-compatible PC with at least a 500 MHz Pentium processor and 1024 MB of RAM.
- ✓ Installation of Windows 2000 SP3, or XP operating system.
- ✓ For Windows 2000, set the total virtual memory (physical memory + paging file) to a minimum of 2048MB.
- ✓ Network connection to IBM intranet.
- ✓ Adobe Acrobat 6.0 Standard Edition or latest release.
- ✓ DB2 Connect Personal Edition 8.1 or latest release.

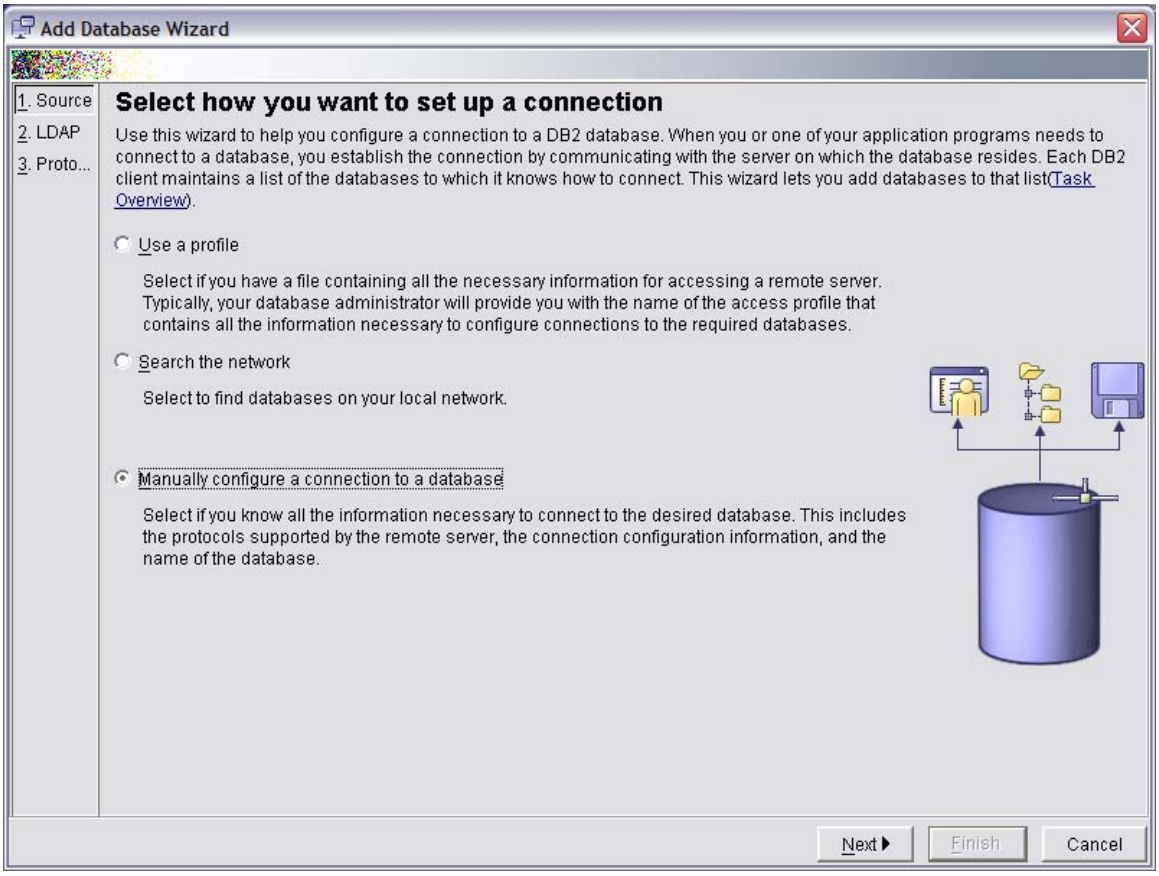
CONFIGURE DB2 CONNECT

Step 1: Using the IBM Standard Software Installer (ISSI), install DB2 Connect Personal Edition 8.1 on the PC where the Insight Reporter will be installed.

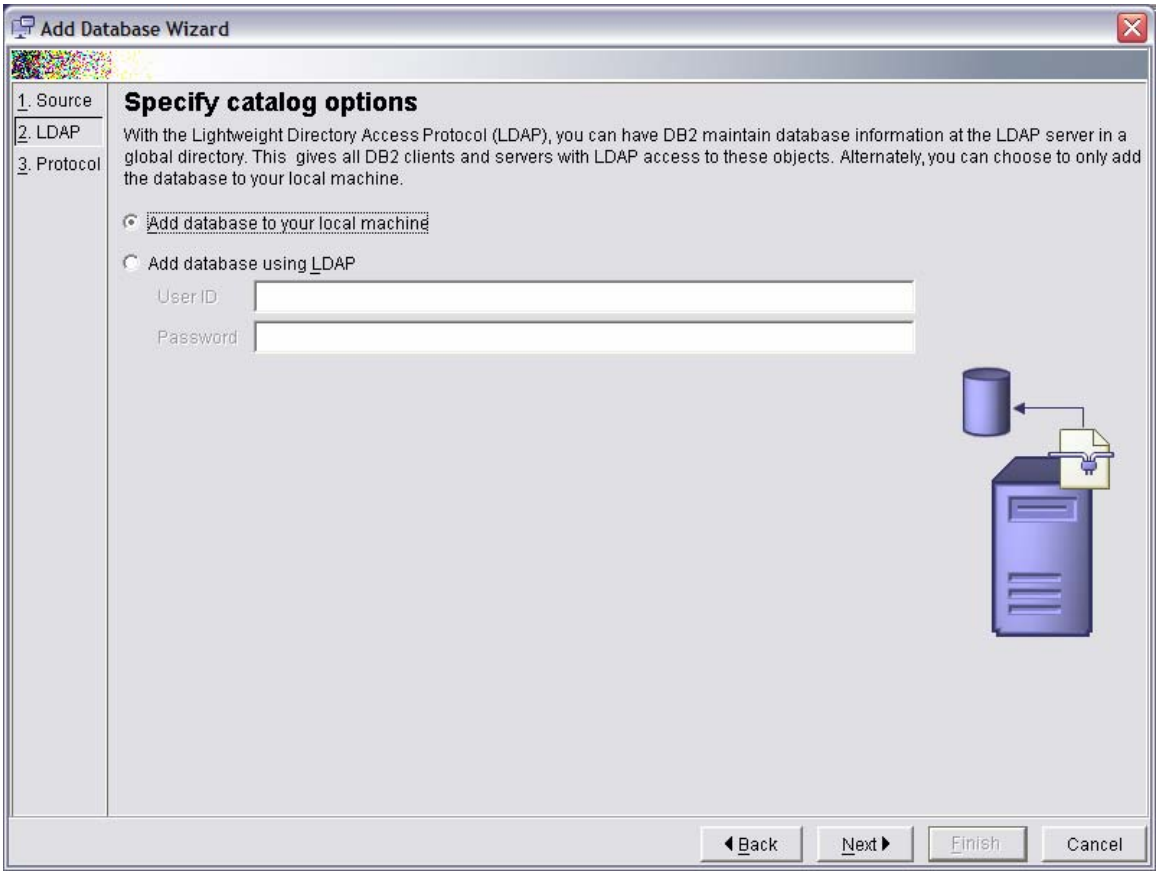
Step 2: Open the DB2 Configuration Assistant from the Windows Start menu under "IBM DB2 -> Set-up Tools"



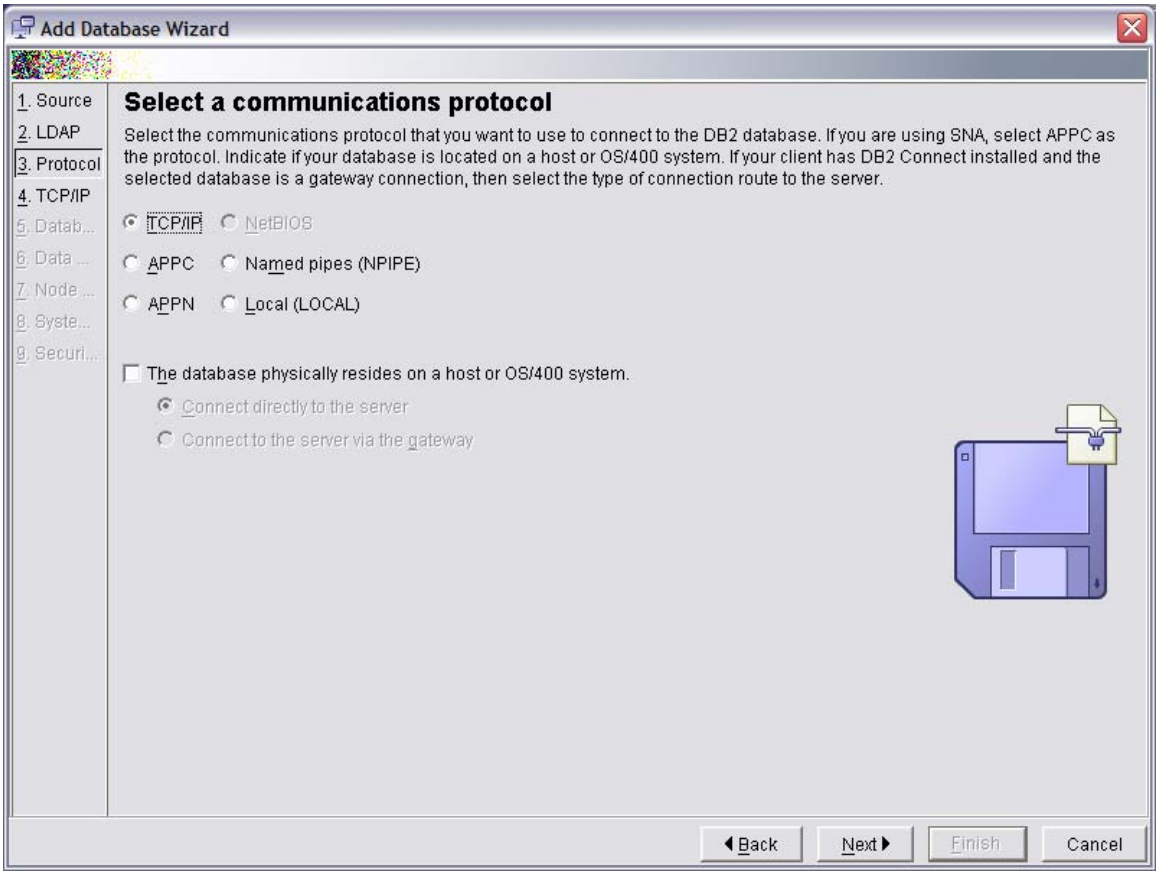
Step 3: Select "Selected -> Add Database Using Wizard…"



Step 4: Select "Manually configure a connection to a database" and press the "Next" button to continue.



Step 5: Select "Add database to your local machine" and press the "Next" button to continue.

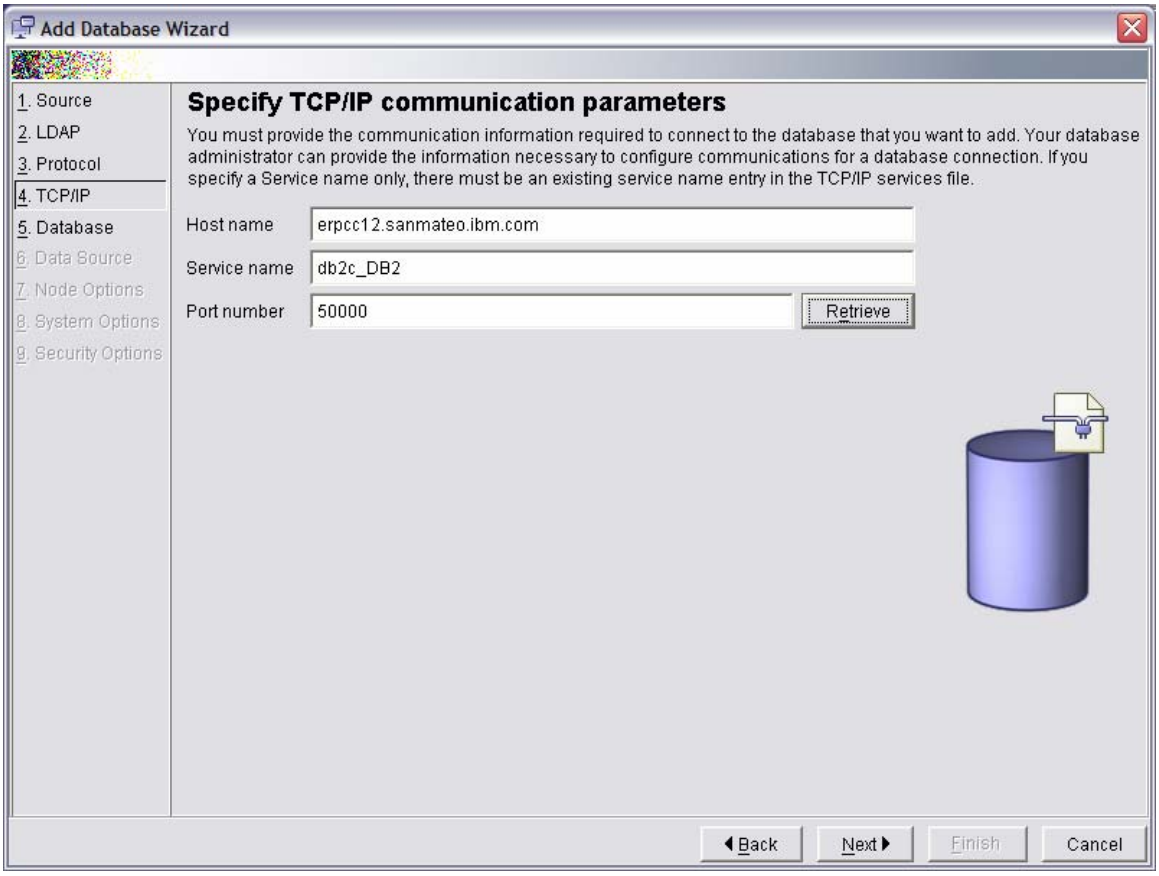


Step 6: Select "TCP/IP" as the communications protocol and press "Next" to continue.

Step 7: Verify that the service "db2c_DB2" exists in the PC's services file. Add the service to the file if not found.

Example: C:\WINDOWS\system32\drivers\etc\services

db2c_DB2 50000/tcp



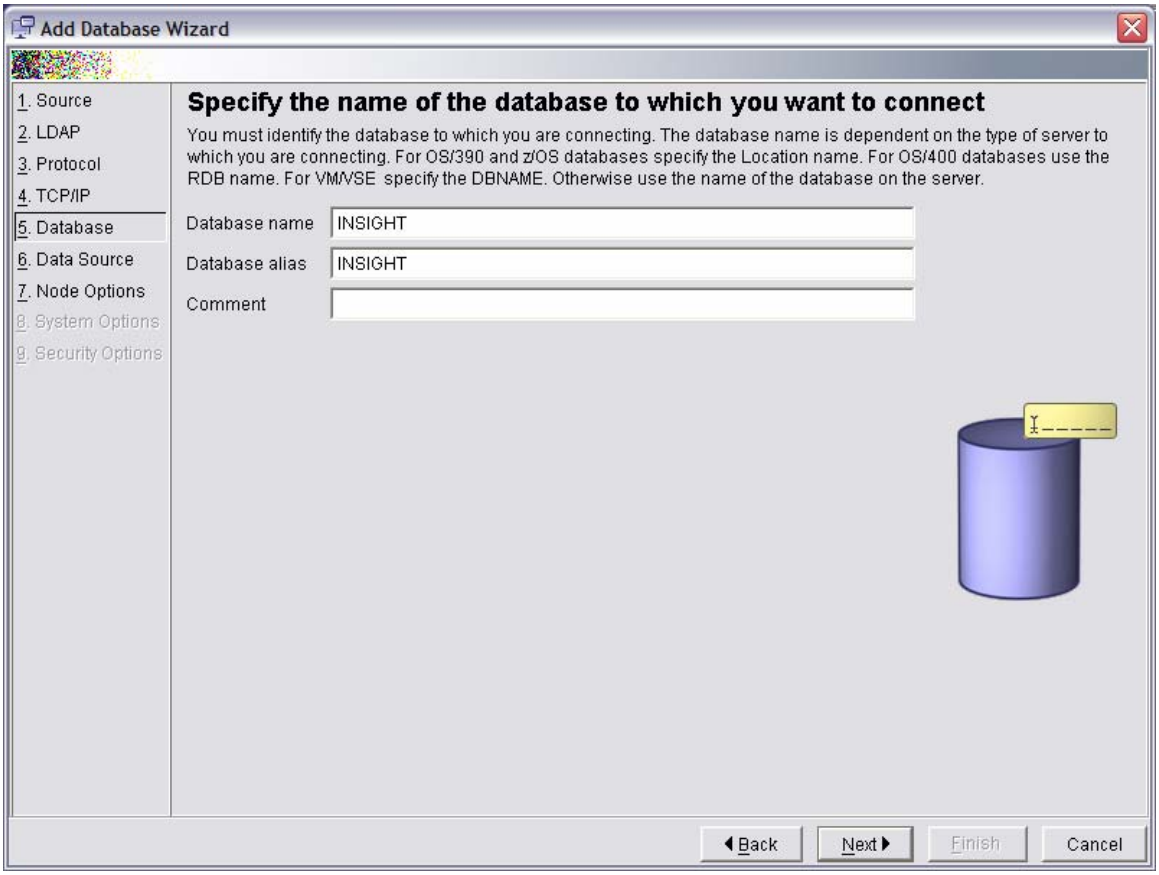
Step 8: Enter the TCP/IP communication parameters:

Host name: erpcc12.sanmateo.ibm.com

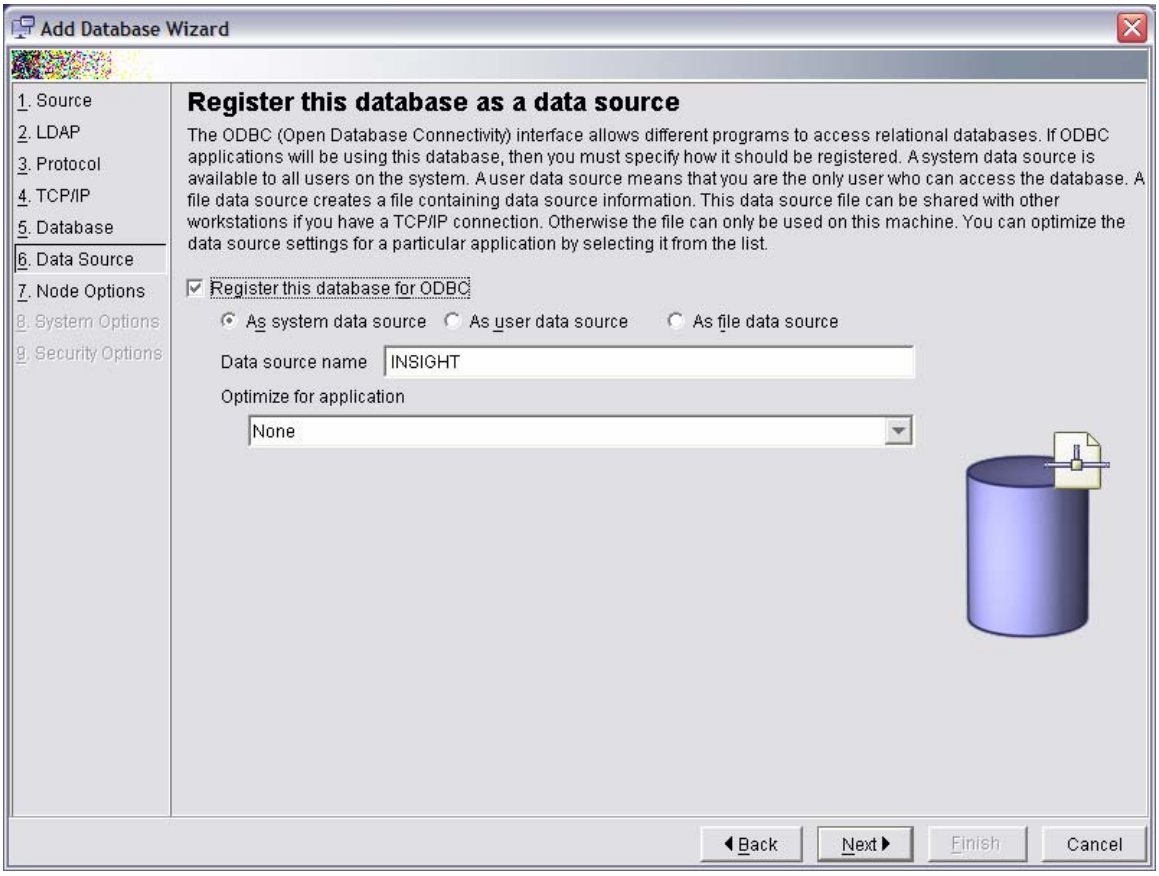
Service name: db2c_DB2

Port number: 50000

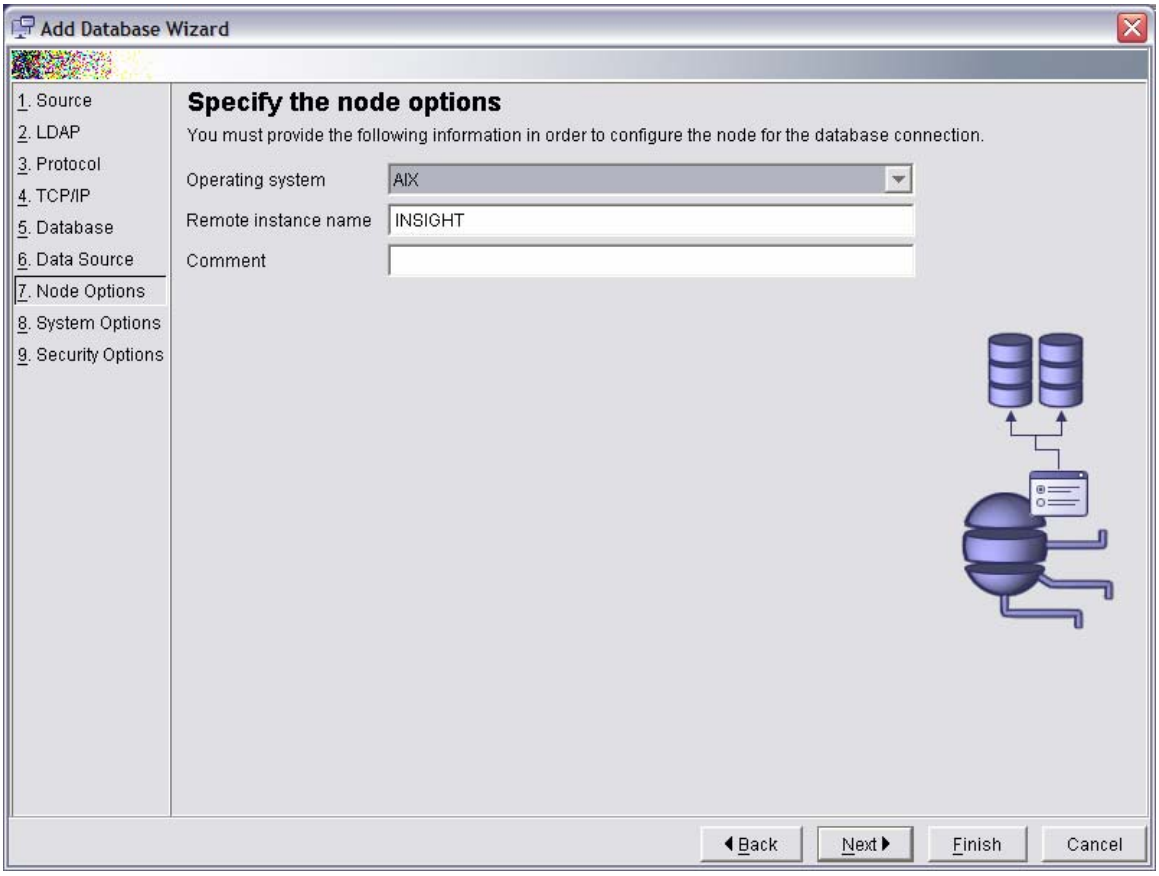
Press the "Next" button to continue.



Step 9: Enter "INSIGHT" as the database name and alias. Press the "Next" button to continue.



Step 10: Register the database for ODBC and press the "Next" button to continue.

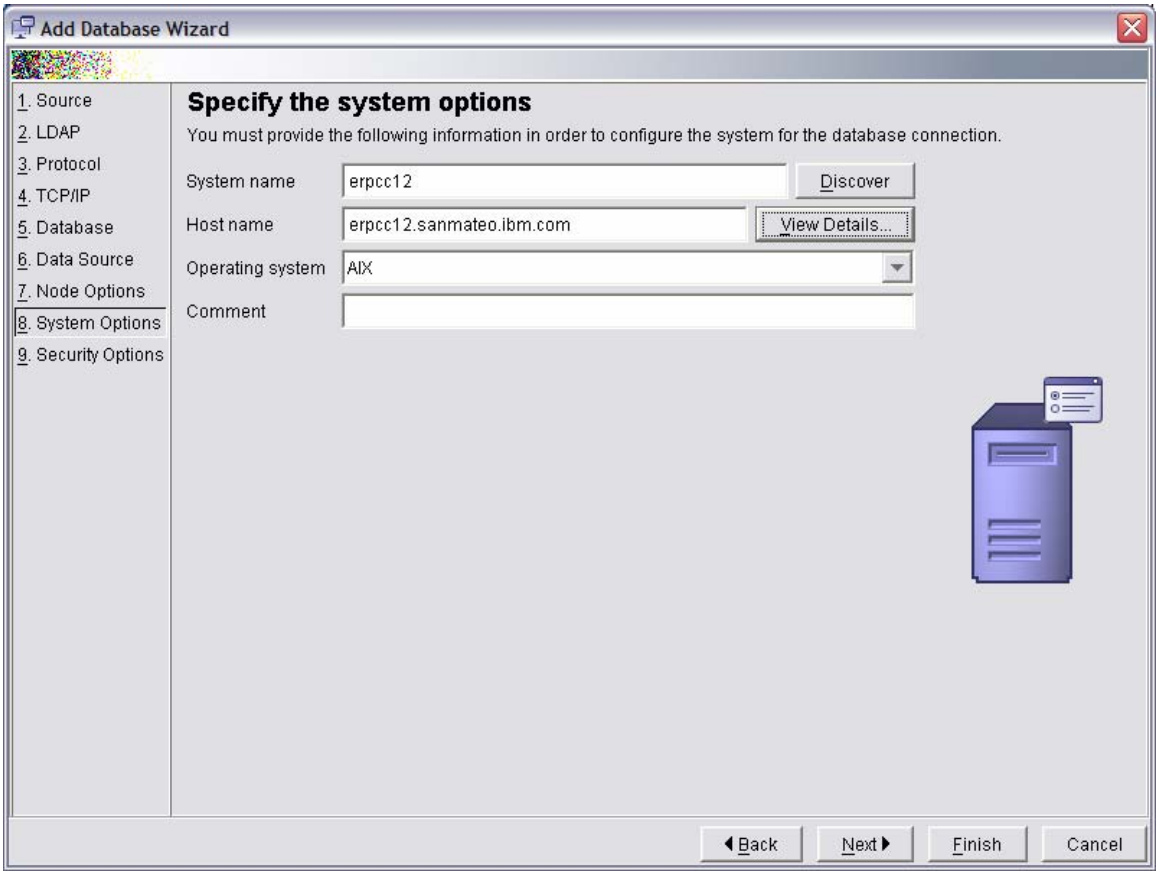


Step 11: Specify the node options:

Operating System: AIX

Remote Instance Name: INSIGHT

Press the "Next" button to continue.



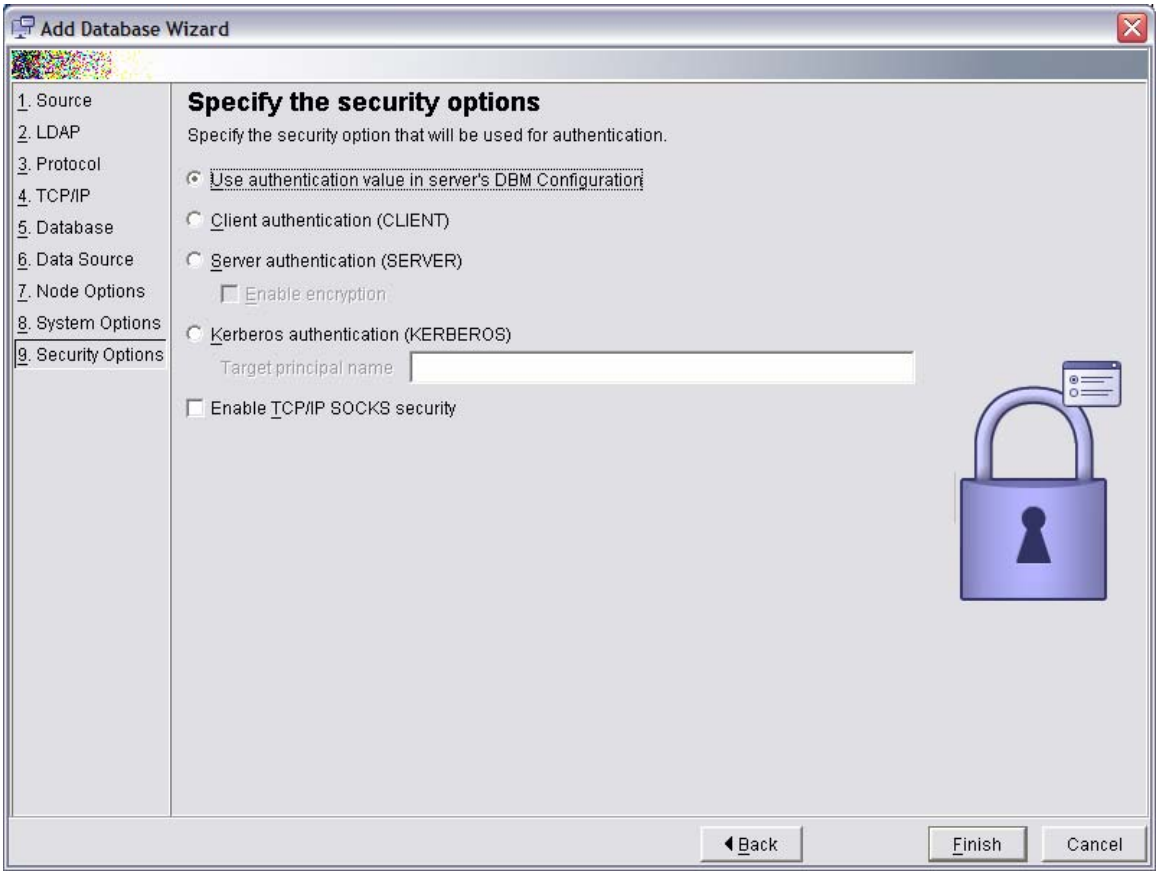
Step 12: Specify the system options:

System name: erpcc12

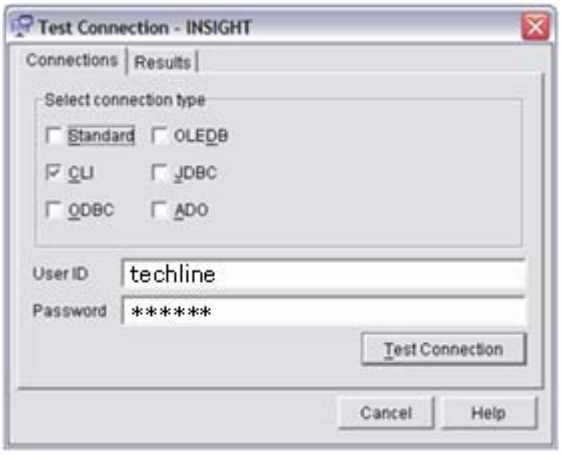
Host name: erpcc12.sanmateo.ibm.com

Operating System: AIX

Press the "Next" button to continue.



Step 13: Select the security option "Use authentication value in server's DBM Configuration" and press the "Finish" button.



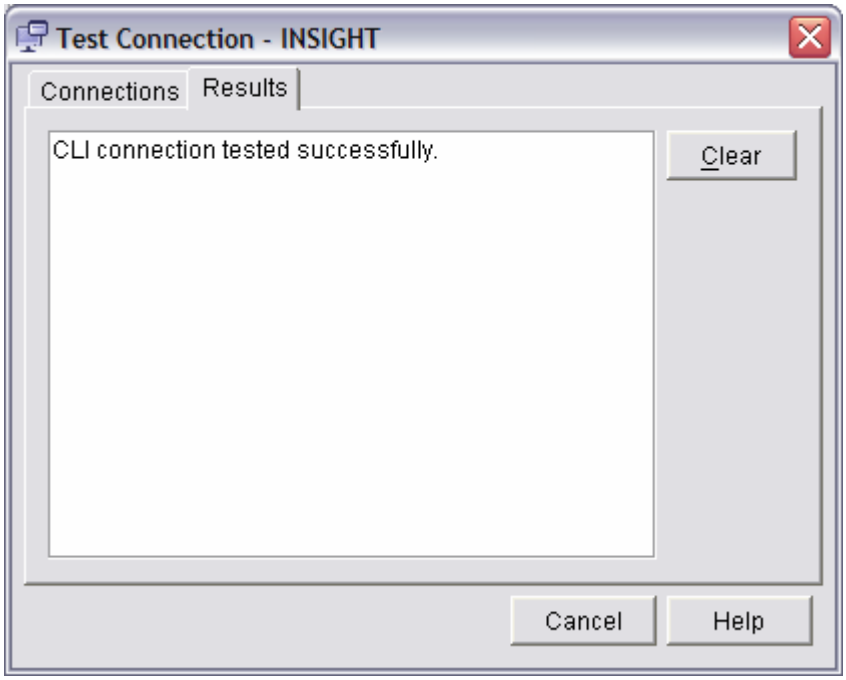
Step 14: Test the connection by entering:

Select connection type: CLI

User ID: techline

Password: <please contact Azam Khan/Wayne/IBM>

Press "Test Connection" to execute.



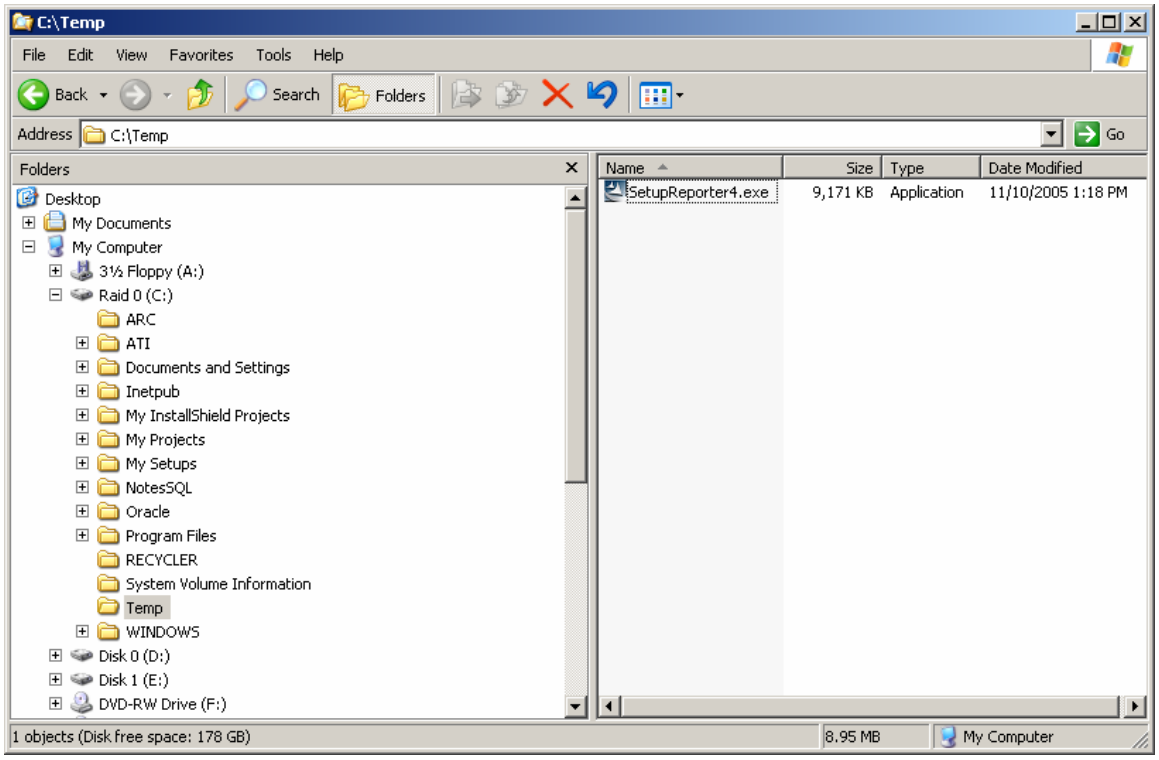
If you see the message "CLI connection tested successfully", DB2 Connect is configured to upload data to the Insight Report Database using the Insight Reporter.

RUN THE INSTALLER:

The Insight Reporter installer is distributed to select Techline specialists.

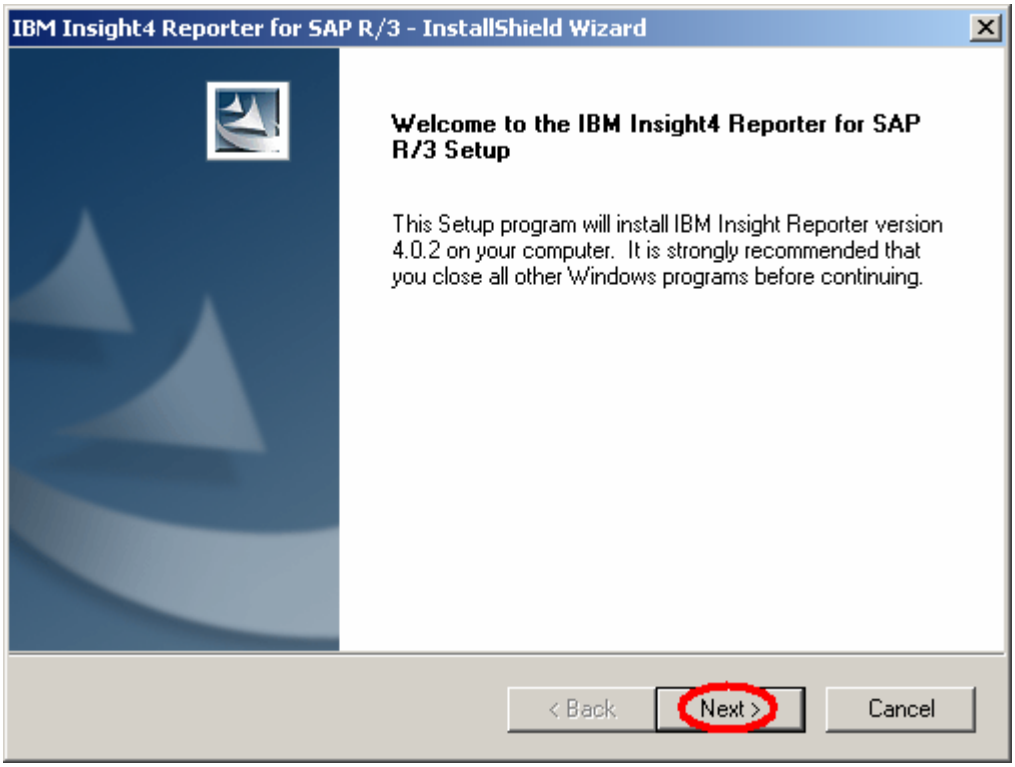
Step 1: When received, copy the Insight Reporter installer "SetupReporter4.exe" to a temporary directory.

Step 2: Using Windows Explorer, go to the temporary directory where the installer was copied.

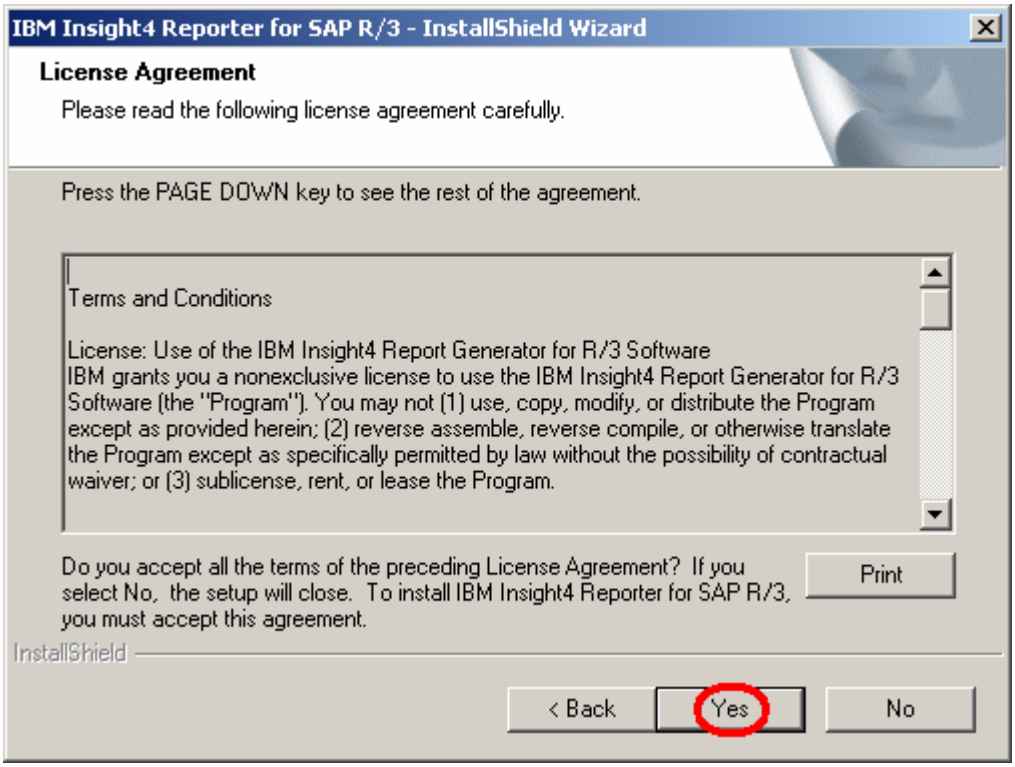


Step 3: Double-click the file "SetupReporter4.exe" to launch the installer.

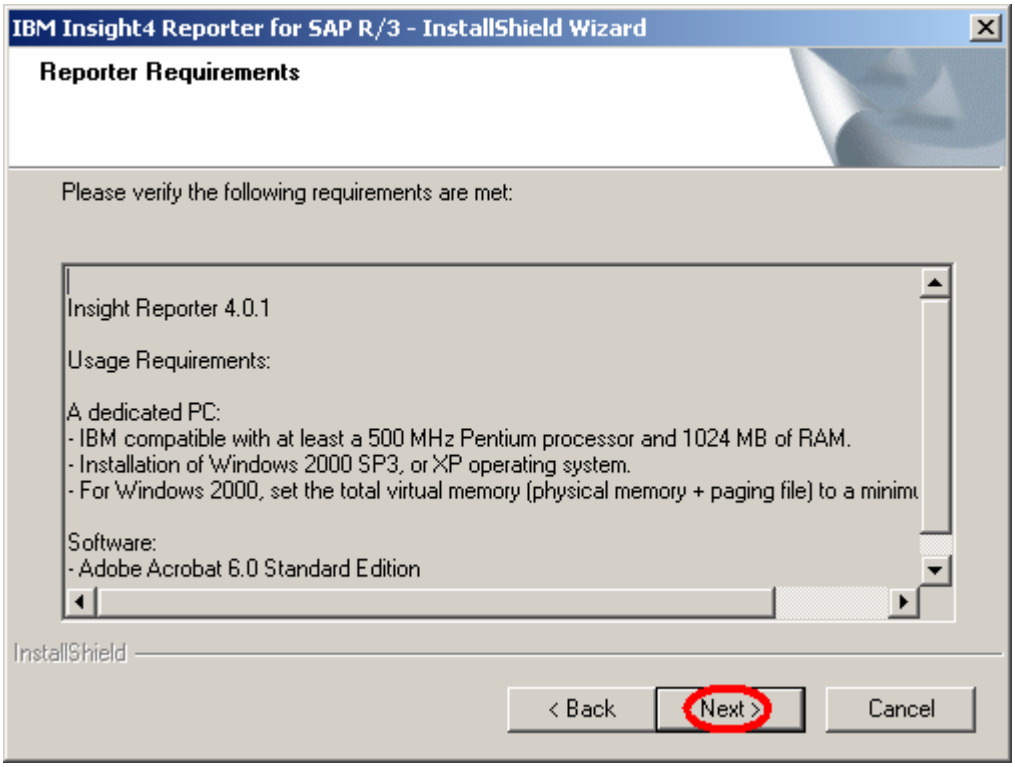
Step 4: If presented with a Windows Security Warning, select "Run" to continue and run the installer.



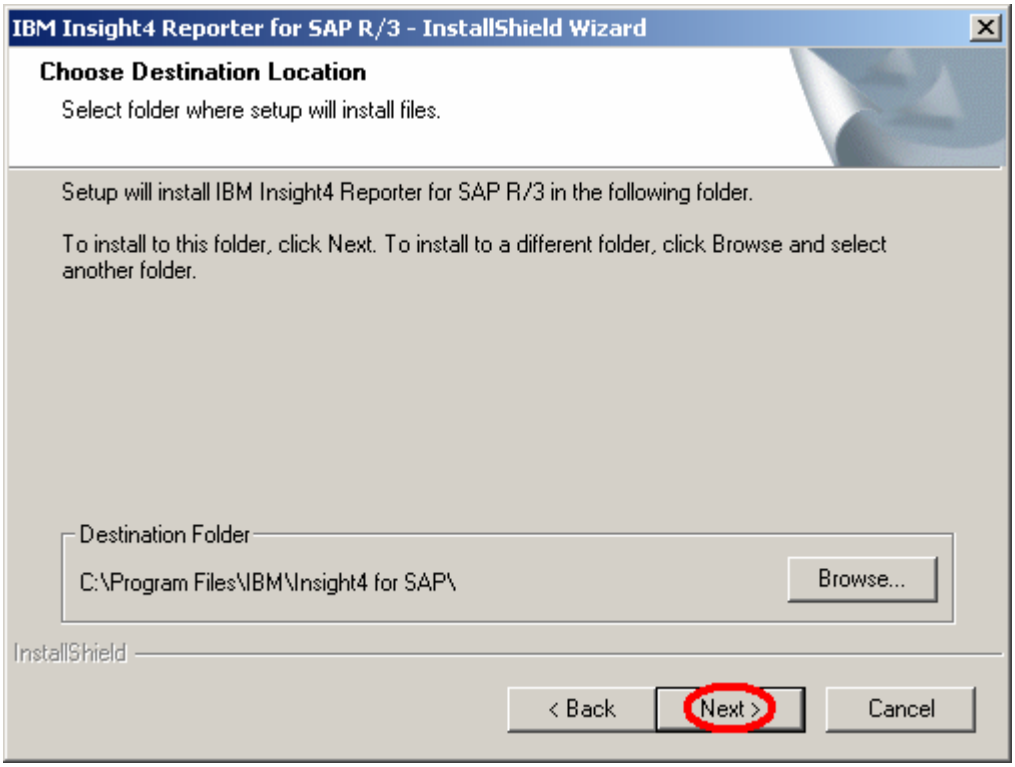
Step 5: When the InstallShield Wizard presents the Welcome Screen, press the "Next" button to continue.



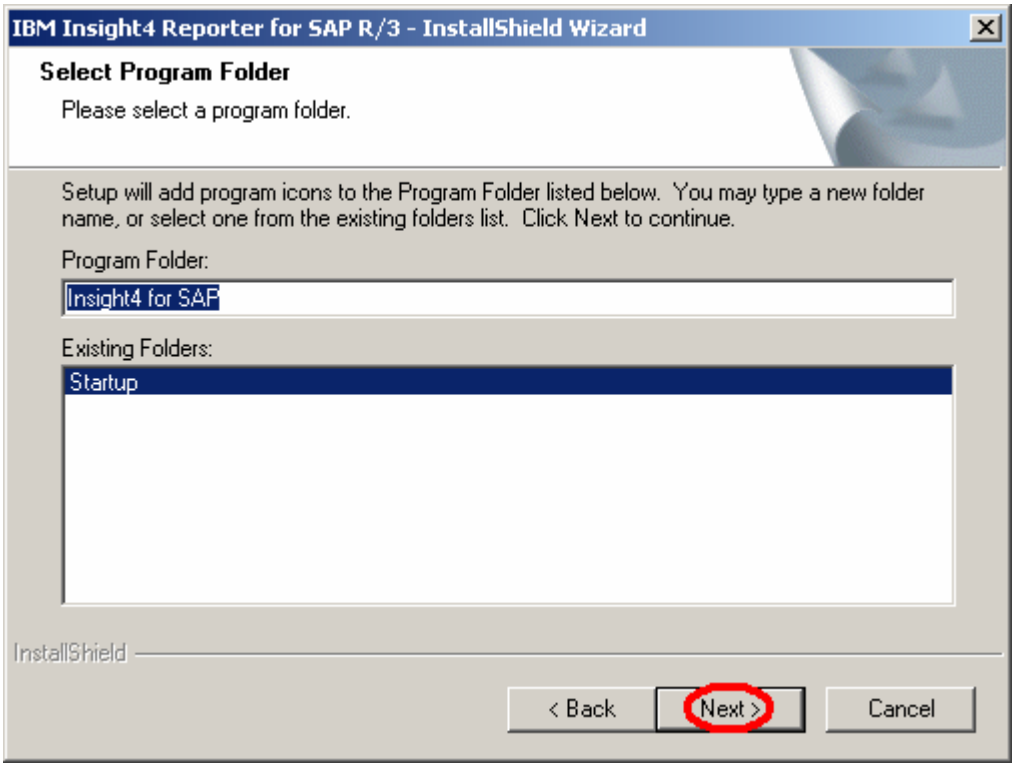
Step 6: Press the "Yes" button to accept the Terms and Conditions of the License Agreement.



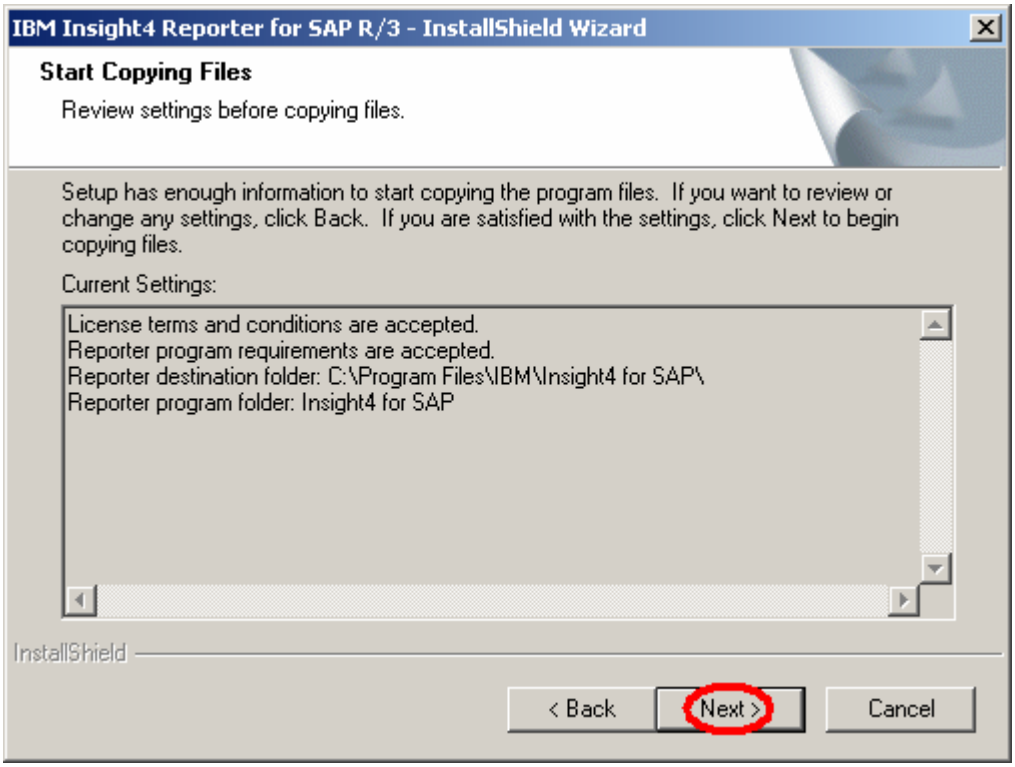
Step 7: Read the Reporter requirements and press the "Next" button to continue.



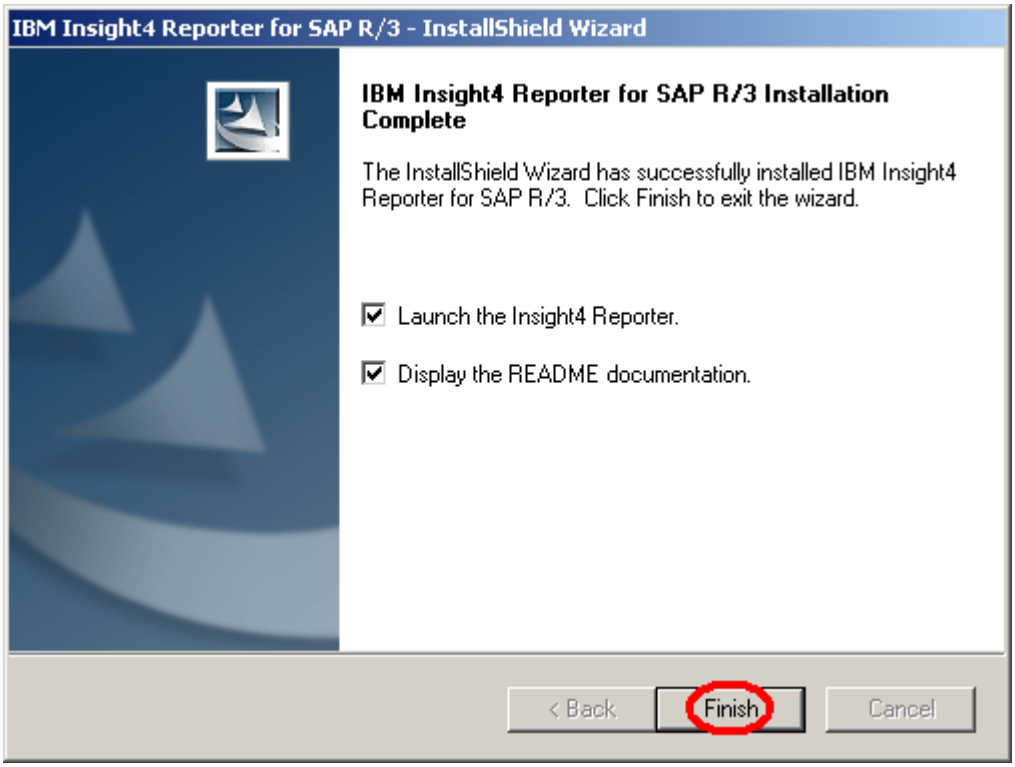
Step 8: Accept the default destination folder (recommended) or press the "Browse" button to specify a different folder. Press the "Next" button to continue.



Step 9: Accept the default program folder (recommended), or specify a different program folder in the "Program Folder" edit box, or select a program folder from the "Existing Folders" list box. Press the "Next" button to continue.



Step 10: Read the list of current settings and press the "Next" button to start copying the Insight program files to the destination folder.

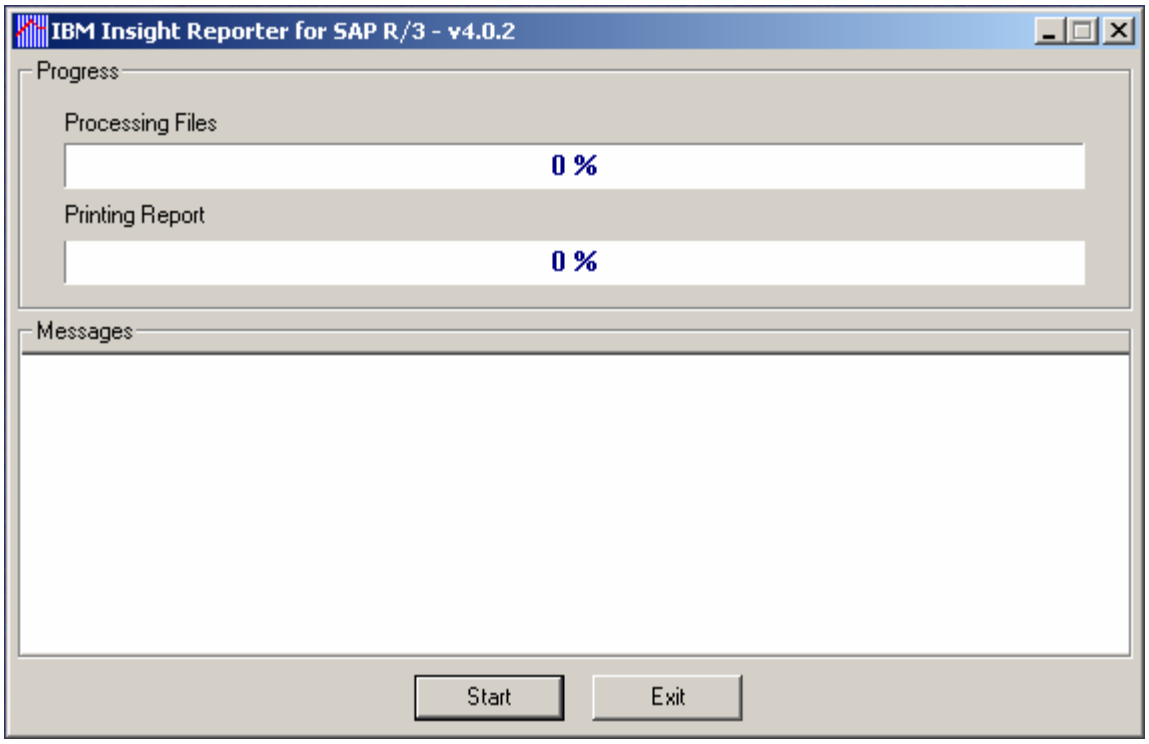


Step 11: Check/uncheck the box to launch the Insight Collector when the installation is complete. Check/uncheck the box to display the README file when the installation is complete. Press the "Finish" button to complete the installation.

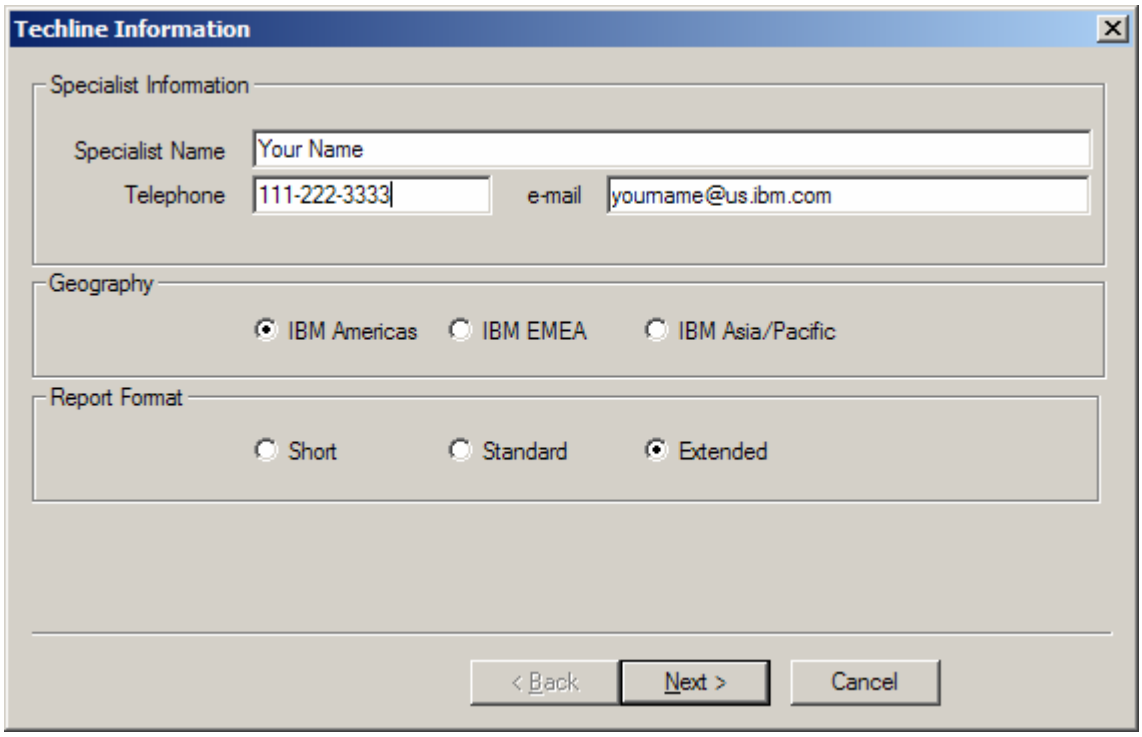
RUN THE REPORTER:

Step 1: Unzip the customer's Insight dataset to a temporary directory.

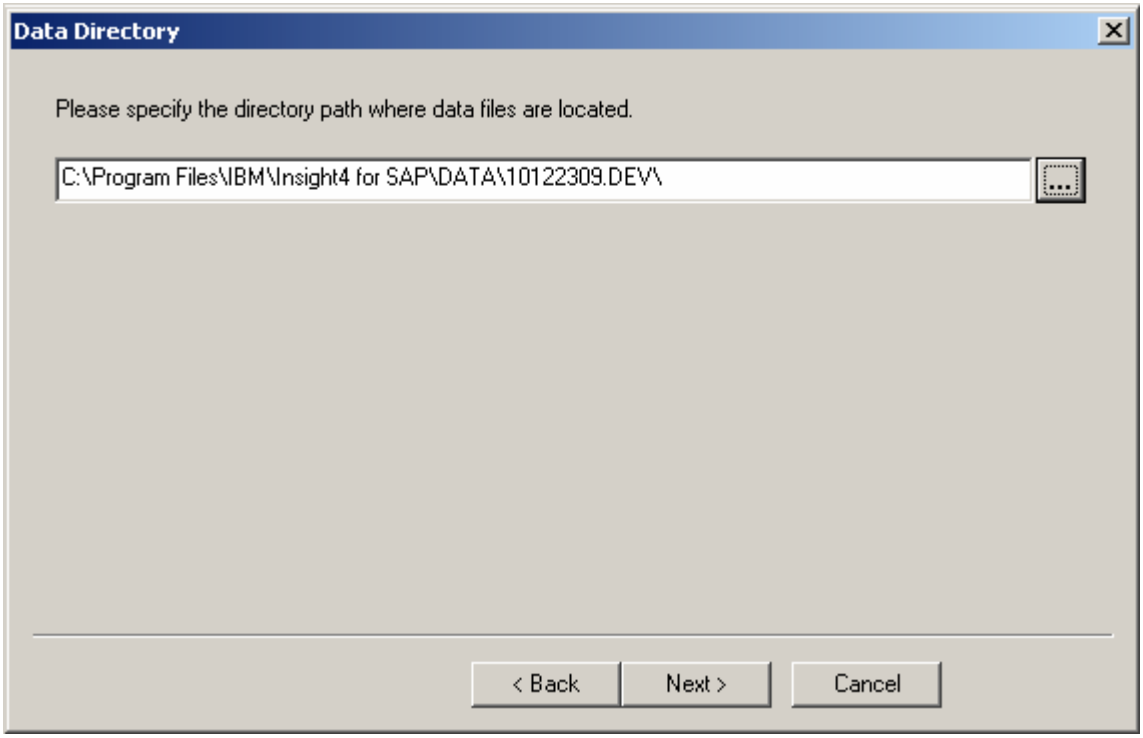
Step 2: Launch the Insight Reporter from the Windows Start menu, select Programs -> Insight4 for SAP -> Reporter4.



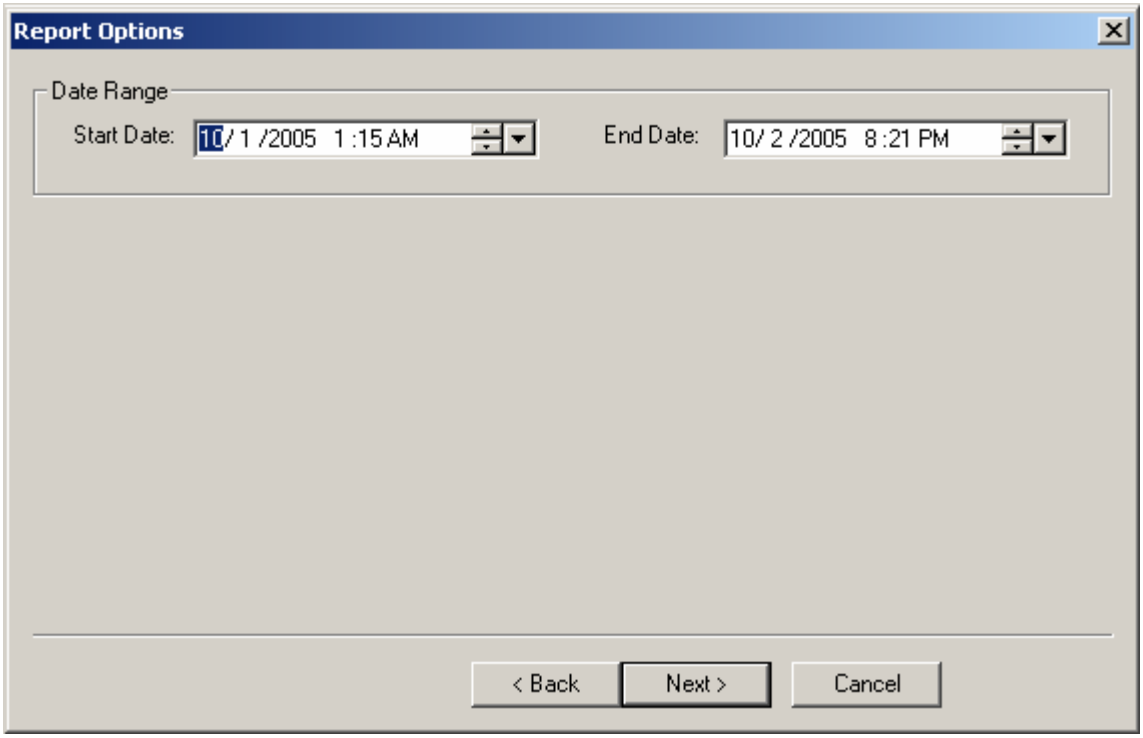
Step 3: Press the "Start" button to launch the information wizard.



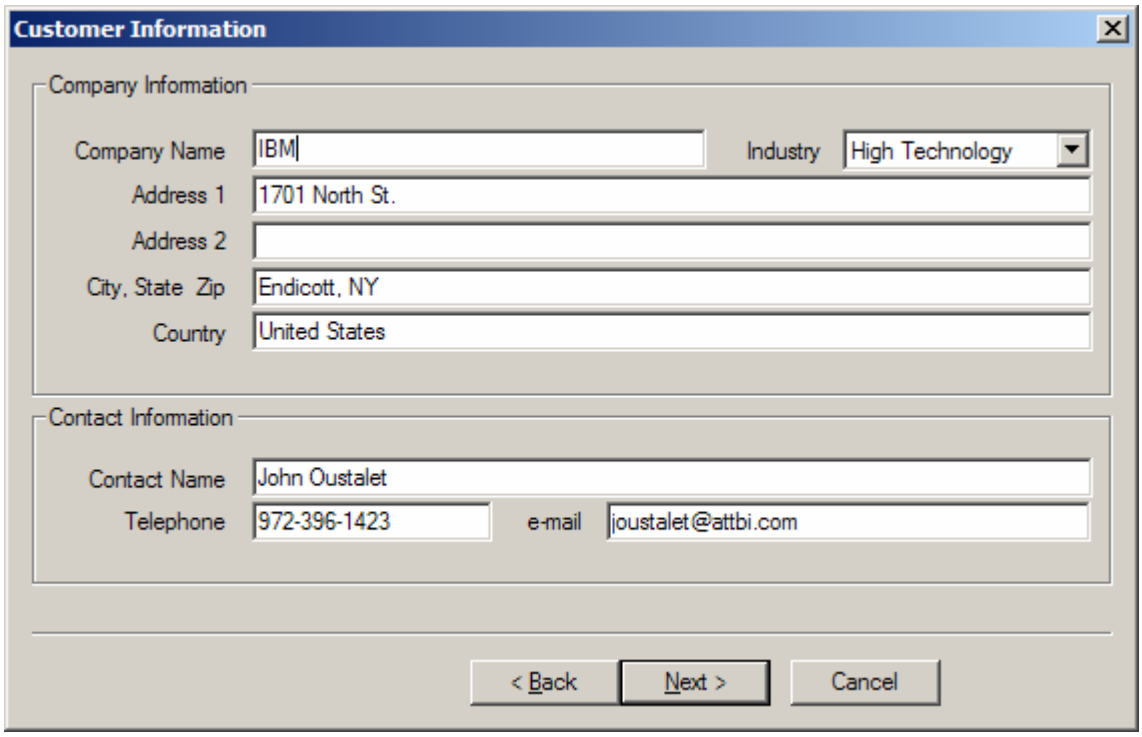
Step 4: Enter your name, telephone number, email address, and report format. Press the "Next" button to continue.



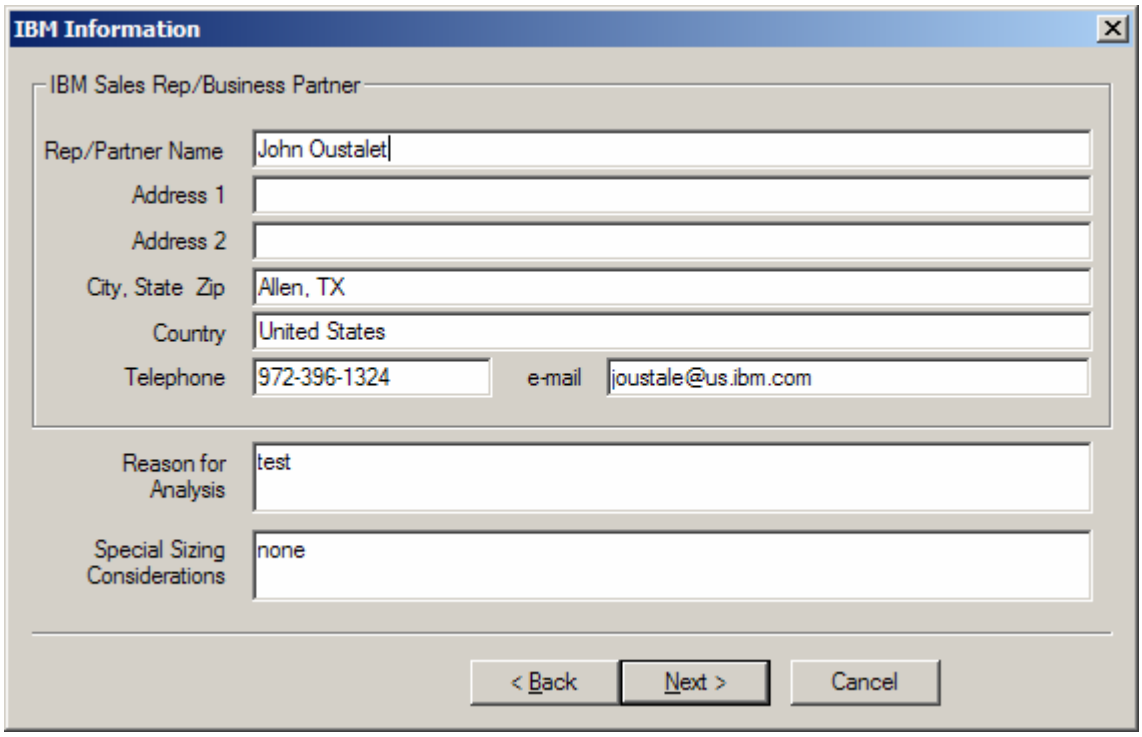
Step 5: Enter the directory path where the unzipped Insight data files are located and press the "Next" button to continue.



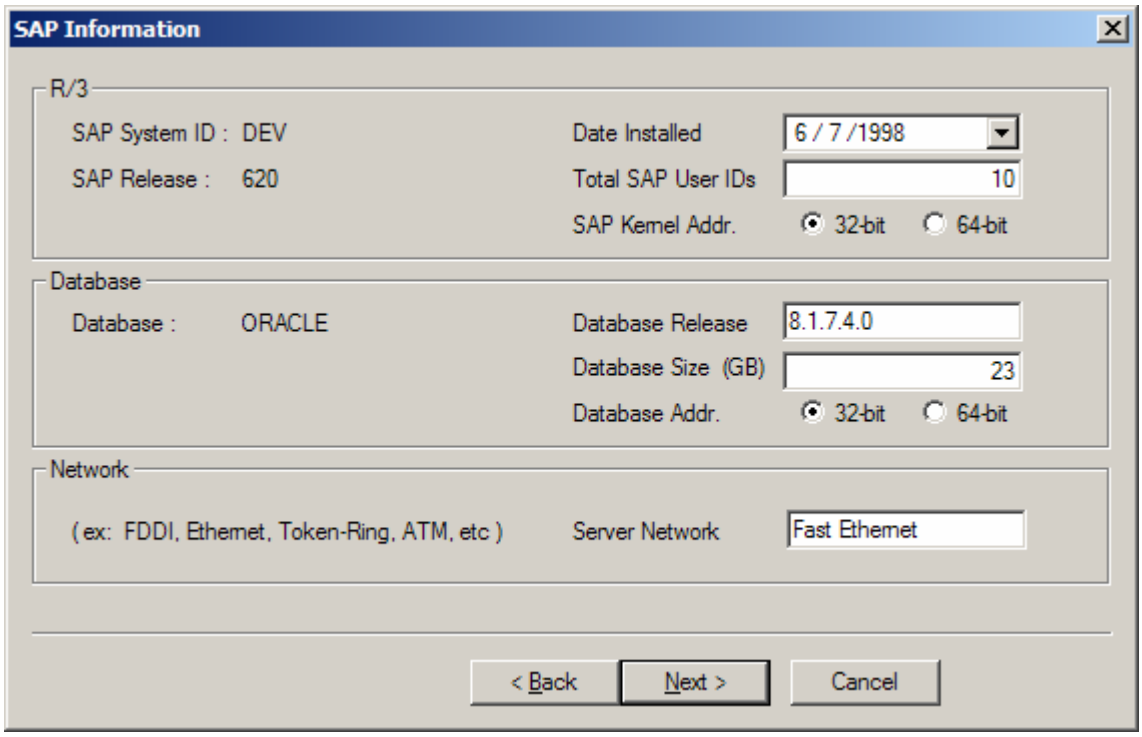
Step 6: Select the date range for the report and press the "Next" button to continue.



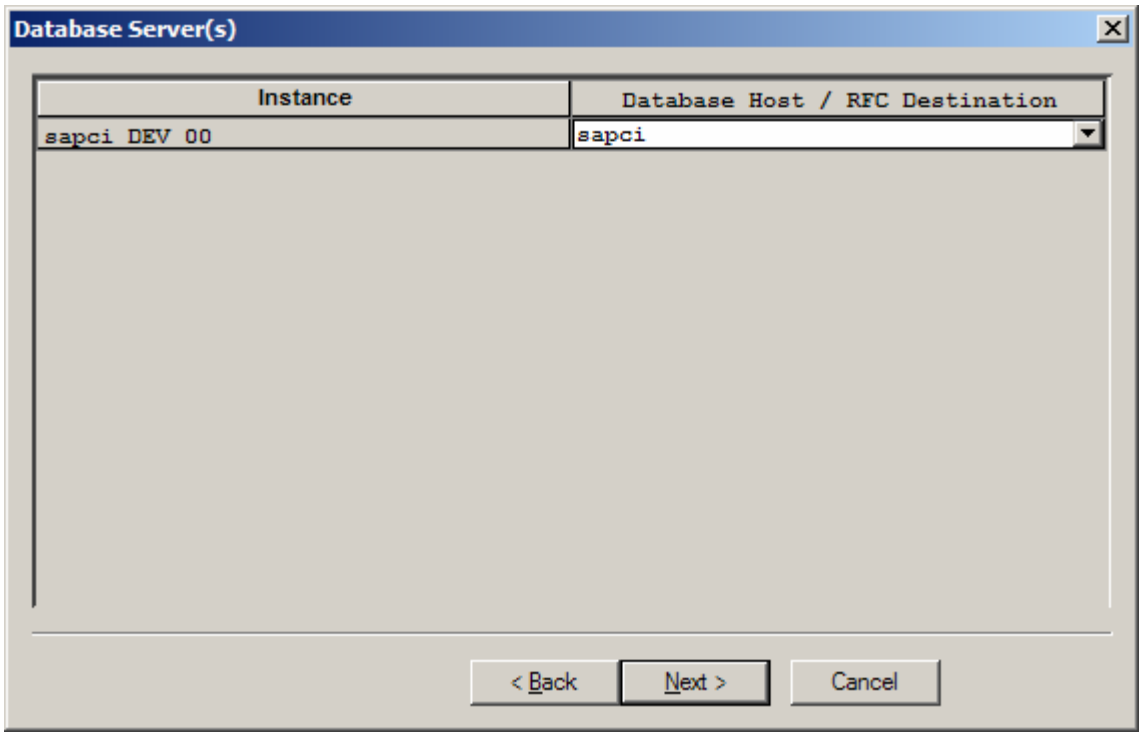
Step 7: Verify or edit customer information and press the "Next" button to continue.



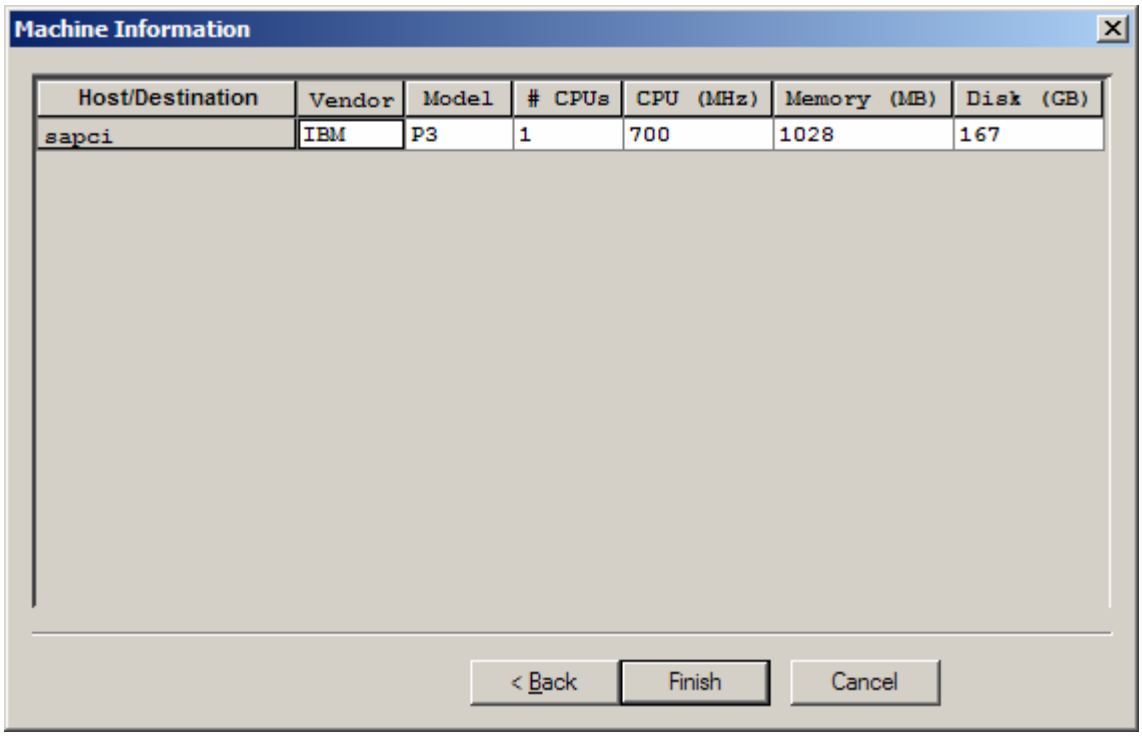
Step 8: Verify or edit the IBM Sales Rep/Business Partner information and press the "Next" button to continue.



Step 9: Verify or edit SAP information and press the "Next" button to continue.

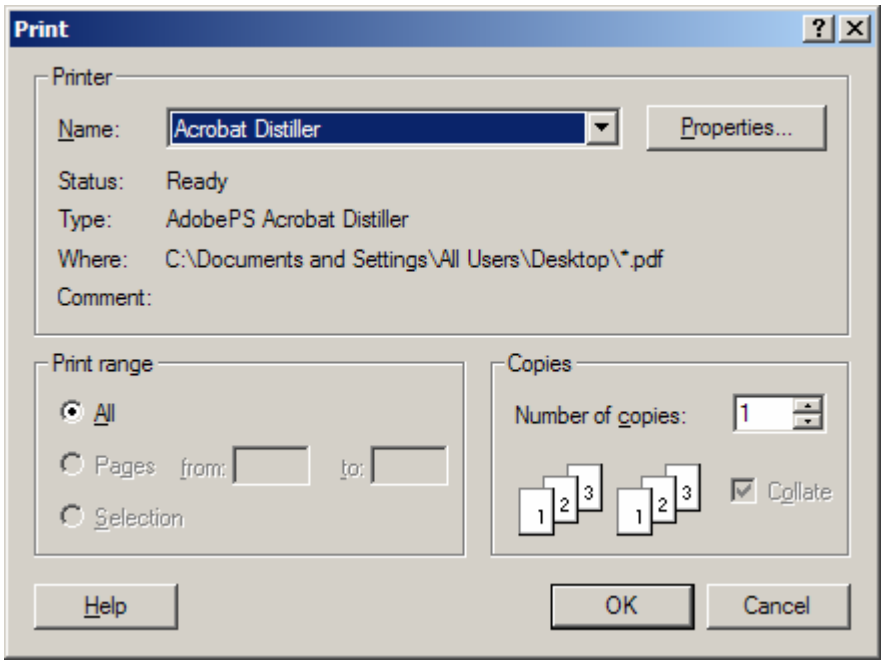


Step 10: Verify or edit database server(s) and press the "Next" button to continue.

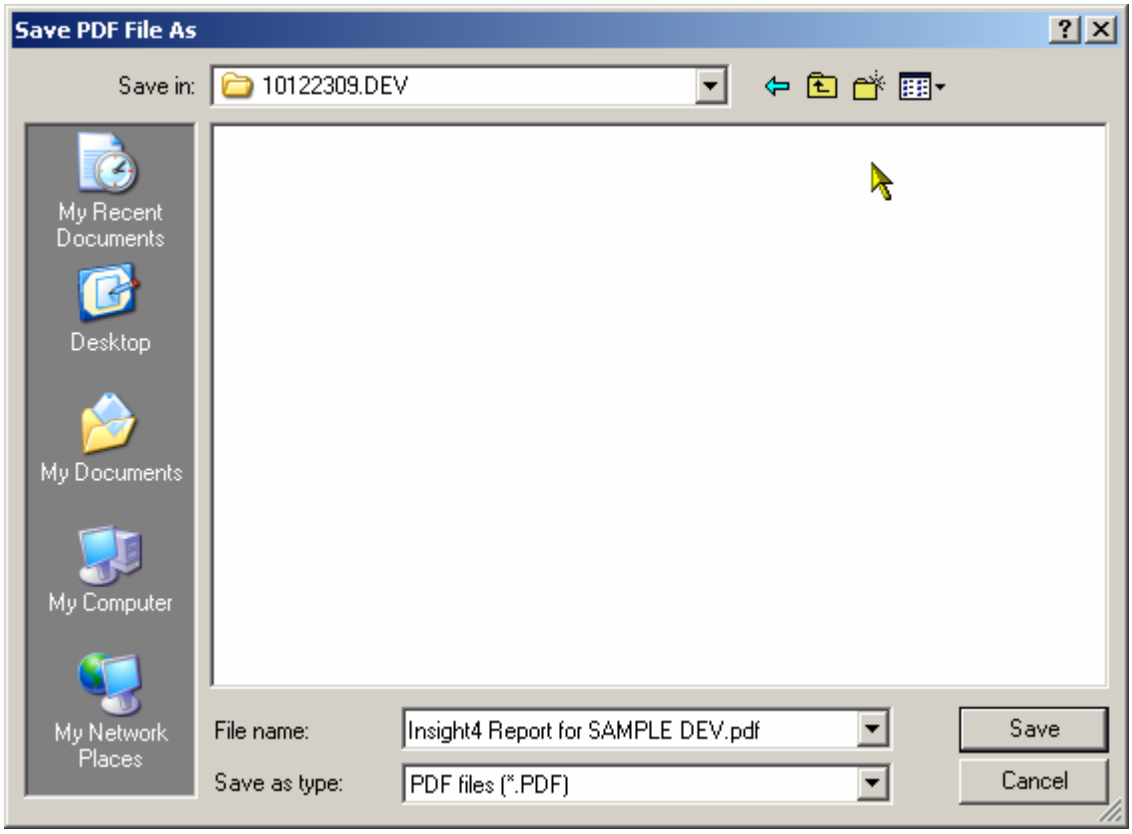


Step 11: Verify or edit the machine information and press the "Finish" button to begin report generation.

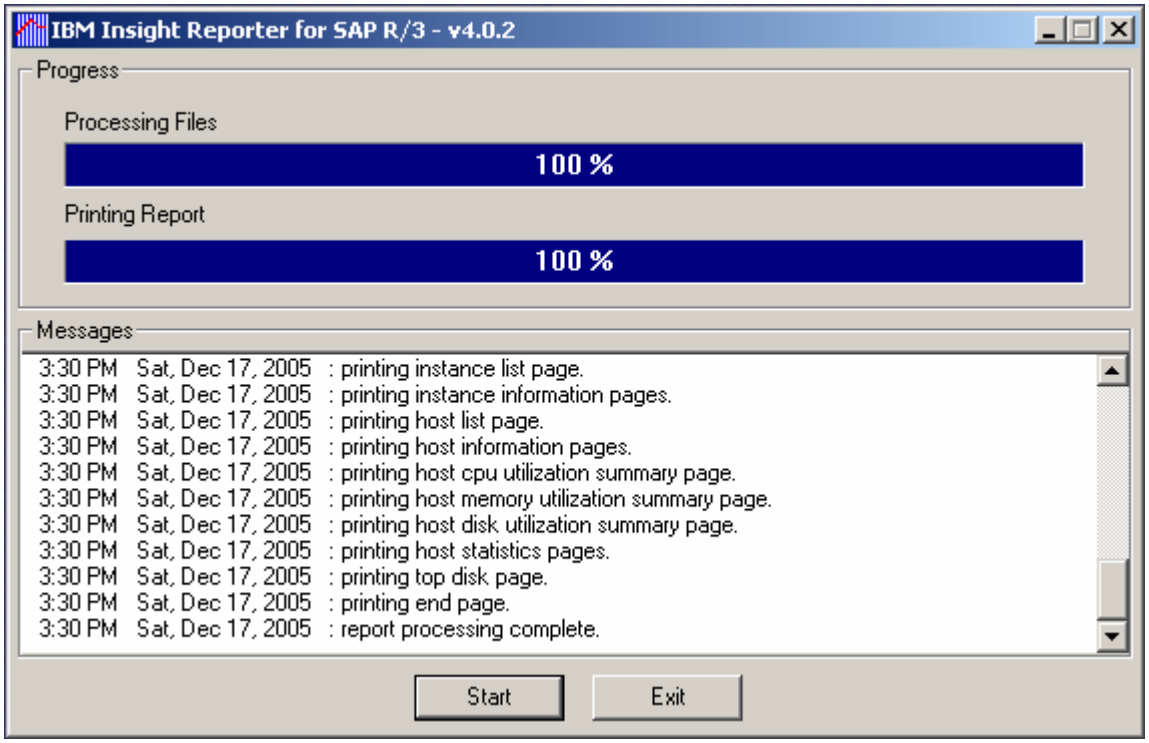
The report generation process will now run. Processing can be cancelled at anytime by pressing the stop button.



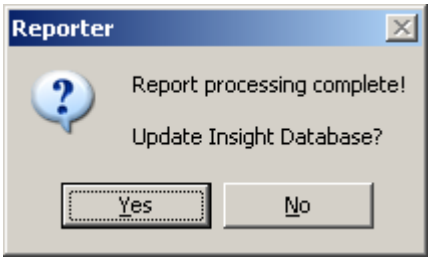
Step 12: Select the printer "Acrobat Distiller" and press the "OK" button to continue.



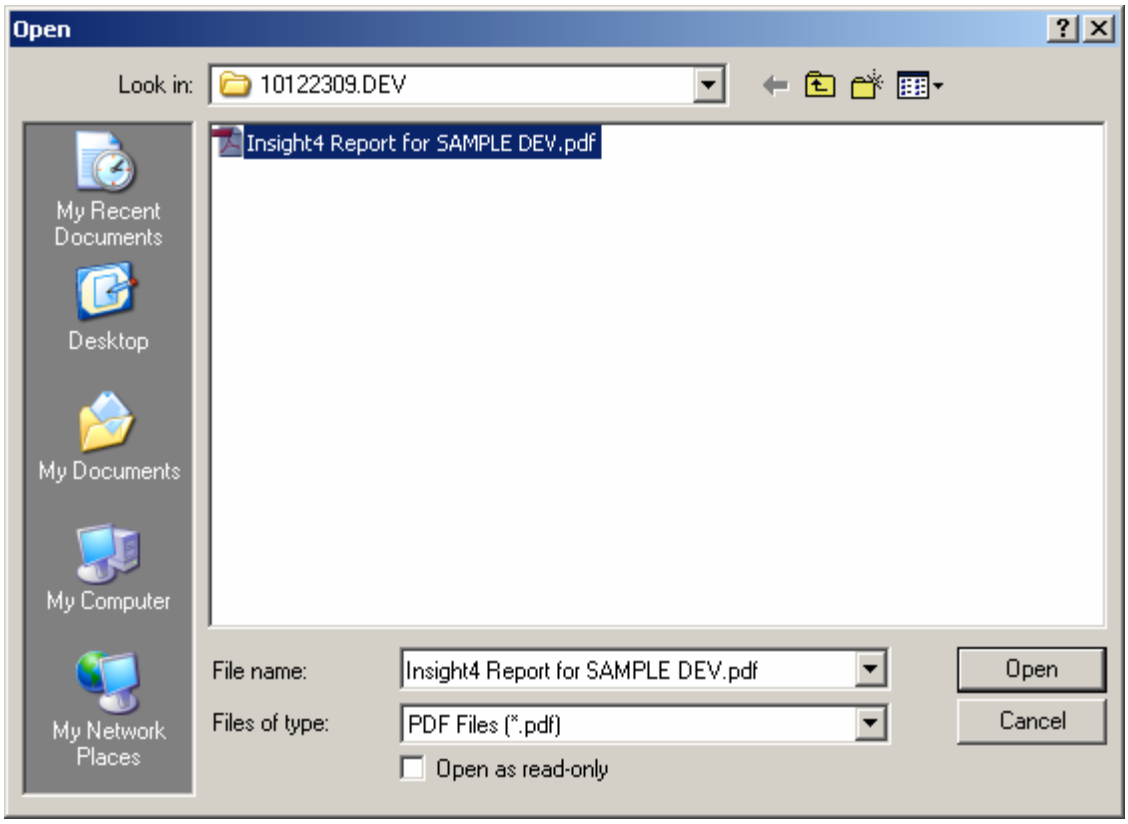
Step 13: Enter the name and location for the PDF file and press the "Save" button to continue.



The PDF file will be created as a print job. When the print job is complete, a message box will appear to prompting you to update the Insight Report Database.

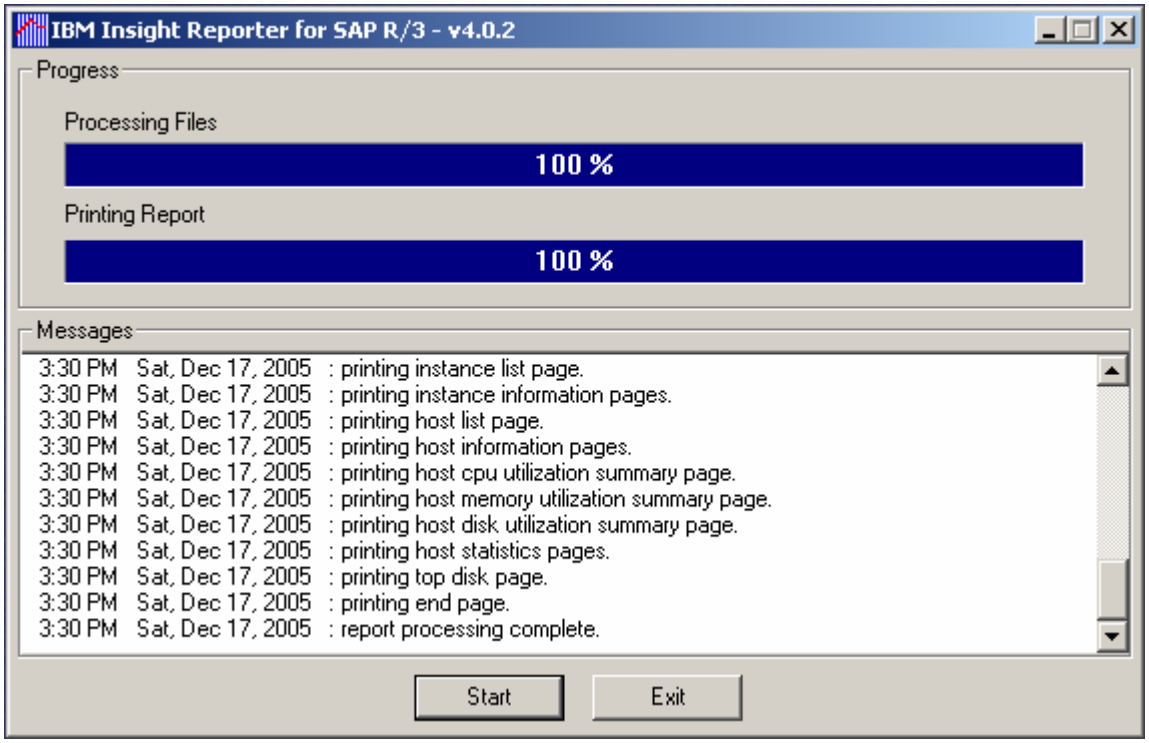


Step 14: Select the "Yes" button to update the Insight Report Database.



Step 15: Select the newly generated PDF file to insert into the database.

Note: You may have to wait for the Acrobat Distiller process to complete before the file name appears in the "Open" dialog.



Step 16: Press the "Start" button to run another report, or the "Exit" button to quit the program.

Insight Report

Overview

The Insight Report provides a high-level workload and utilization analysis for an in-production SAP R/3 system.

The report is composed of three main groupings of information, charts, and tables:

- System-wide.
- Application Server.
- Host.

The **system-wide grouping** provides information and statistics for the R/3 system as a whole.

The **application server grouping** provides information and statistics for each active application server (instance) in the R/3 system.

The **host grouping** provides information and statistics for each application server and database host in the R/3 system.

Line charts are presented in a 24-hour format where each line represents the data points for an individual calendar day.

Pie charts are presented as proportions of total for the entire collection period.

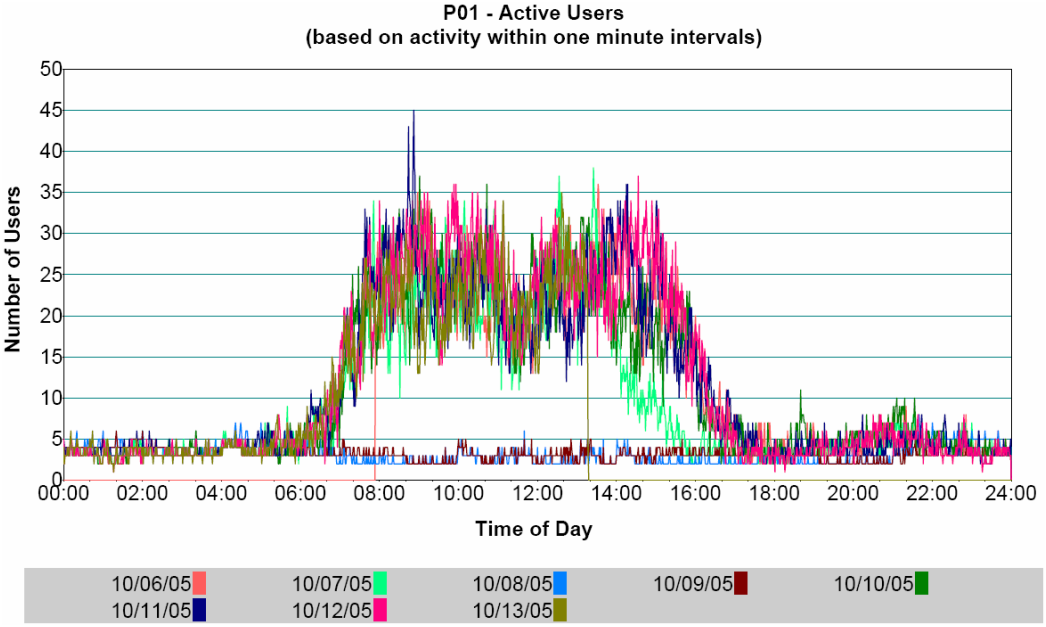
Some table lines are presented in alternating color to make the tables more readable.

Date and time displayed in the Insight report will be based on the PC clock where the Insight Collector is run – not the R/3 application servers.

System Charts and Tables

- Active Users
- Dialog Steps
- Dialog Steps By Task Type
- Dialog Steps By Module
- Dialog Steps By Code Type
- Dialog Response Time
- Update Elapsed Time
- Background Elapsed Time
- CPU Time By Task Type
- CPU Time By Module
- CPU Time By Code Type
- Database Wait Time By Task Type
- Database Wait Time By Module
- Database Wait Time By Code Type
- Top Transactions By Number Of Dialog Steps
- Top Transactions By Application Server CPU Time
- Top Transactions By Database Wait Time
- Top Transactions By Memory Consumption
- Top Transactions By Avg Dialog Response Time
- Top Users By Number Of Dialog Steps
- Top Users By Application Server CPU Time
- Top Users By Database Wait Time
- Top Users By Memory Consumption
- Top Users By Average Dialog Response Time

ACTIVE USERS



This chart plots the number of SAP users actively working in R/3 over time.

An active user generates R/3 workload resulting in dialog steps. If a user's dialog step executes within a minute interval, the user is considered active in that interval. A user's dialog step could span several minute intervals.

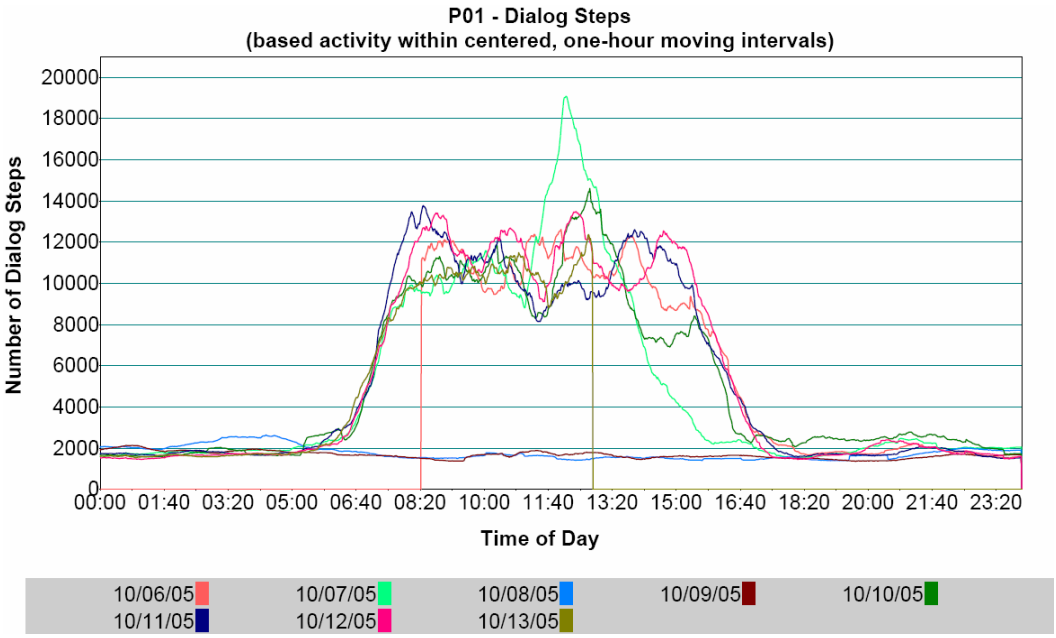
Each data point represents the number of active users within a minute interval. Each line represents the data points within a 24-hour calendar day.

Dialog step execution is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide:

- Highest number of active users within a minute interval.
- Average number of active users within a minute interval during the collection period
- Number of unique R/3 user IDs active during the collection period.

DIALOG STEPS



This chart plots the number of dialog steps executing within moving, one-hour intervals over time.

If any part of a dialog step executes within a one-hour interval, the dialog step is counted in that one-hour interval.

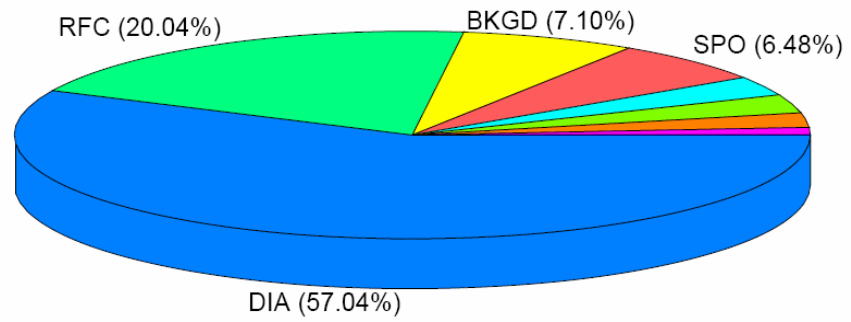
Each data point represents the sum of dialog steps executing within a one-hour interval – thirty minutes before and after a point in time. Each line represents the data points within a 24-hour calendar day.

Dialog step execution is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide:

- Highest number of dialog steps within a one-hour interval.
- Average number of dialog steps within one-hour intervals during the collection period

DIALOG STEPS BY TASK TYPE



This chart represents the total number of dialog steps executed during the collection period, grouped by task type and ordered by percentage of total dialog steps.

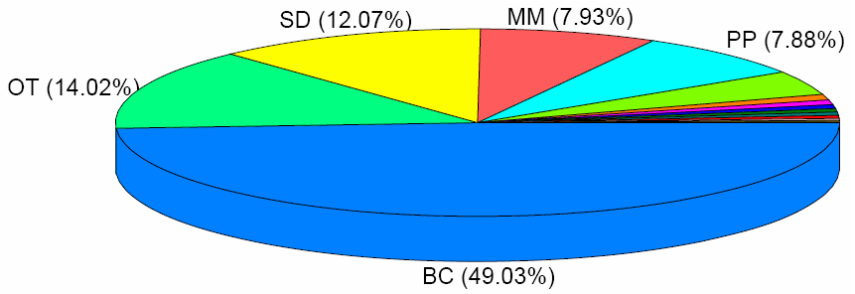
Dialog step execution is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide dialog step totals grouped by task type and ordered by count.

Dialog Step Task Types:

DIA	Dialog
UPD	Update (V1)
SPO	Spool
BKGD	Background
ENQ	Enqueue
BUF	Buffer Synchronization
CYCL	Cyclic Background ABAP
UP2	Update (V2)
ALE	Application Link Enabling
RFC	Remote Function Call
CPIC	Common Programming Interface for Communication

DIALOG STEPS BY MODULE



This chart represents the total number of dialog steps executed during the collection period, grouped by R/3 application module and ordered by percentage of total dialog steps.

Dialog step execution is determined by analyzing R/3 application server "stat" file records.

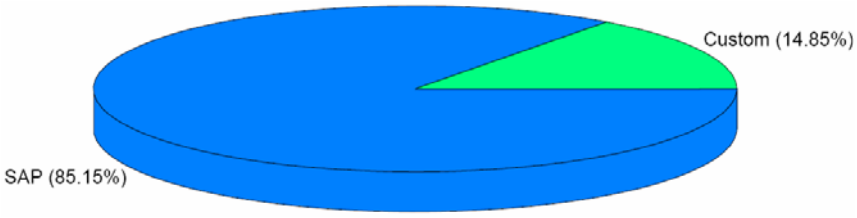
The statistics at the bottom of the report page provide dialog step totals grouped by R/3 application module and ordered by count.

R/3 Application Modules:

AC Accounting – General
BC Basis Components
CA Cross-Application Components
CO Controlling
CS Customer Service
EC Enterprise Controlling
FI Financial Accounting
IM Investment Management
LE Logistics Execution
LO Logistics - General
MM Materials Management
QM Quality Management
PA Personnel Management
PE Training and Event Management
PM Plant Maintenance
PP Production Planning and Control
PS Project System
PT Personnel Time Management
PY Payroll Accounting
RE Real Estate Management
SD Sales and Distribution
SV Service
SCM-EM Supply Chain Event Management
TR Treasury

OT Other (Not Defined in R/3 Application Hierarchy)

DIALOG STEPS BY CODE TYPE



This chart represents the total number of dialog steps executed during the collection period, grouped by ABAP code type and ordered by percentage of total dialog steps.

Dialog step execution is determined by analyzing R/3 application server "stat" file records.

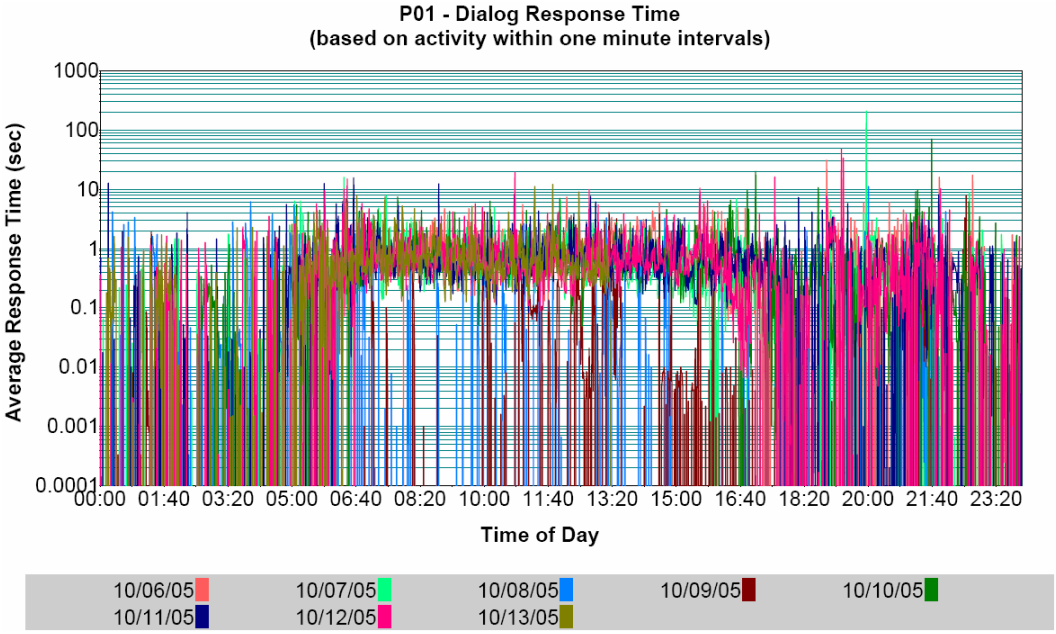
The statistics at the bottom of the report page provide dialog step totals grouped by ABAP code type and ordered by count.

ABAP Code Types:

- SAP ABAP code provided by SAP.
- Custom ABAP code written by customer.

Custom code is determined by checking the first character of the tcode, module pool, or report name for a 'Y' or 'Z'.

DIALOG RESPONSE TIME



This chart plots the average response time of dialog steps, task type "DIA", in one-minute intervals over time. The response times of dialog steps ending within an interval are summed and then averaged. For R/3 systems 4.6B and later, the response time includes SAPGUI time providing end-to-end response time.

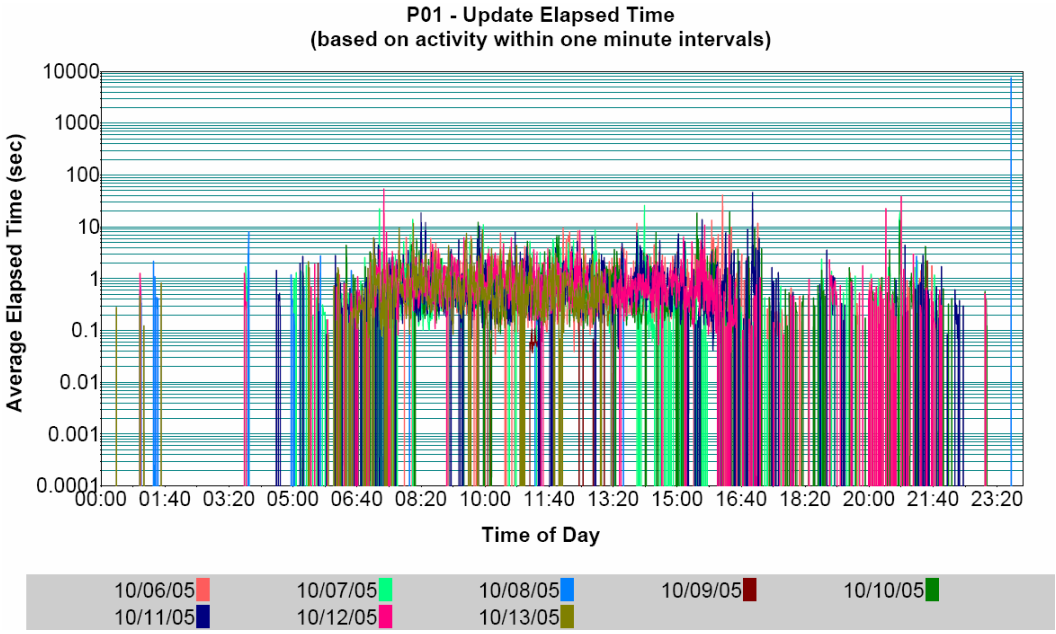
Each data point represents the average dialog response time within a one-minute interval. Each line represents the data points within a 24-hour calendar day.

Dialog step response time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide:

- Highest average response time within one-minute intervals.
- Average response time within one-minute intervals during the collection period

UPDATE ELAPSED TIME



This chart plots the average elapsed time of dialog steps, task type "UPD", in one-minute intervals over time. The elapsed time of dialog steps ending within an interval are summed and then averaged.

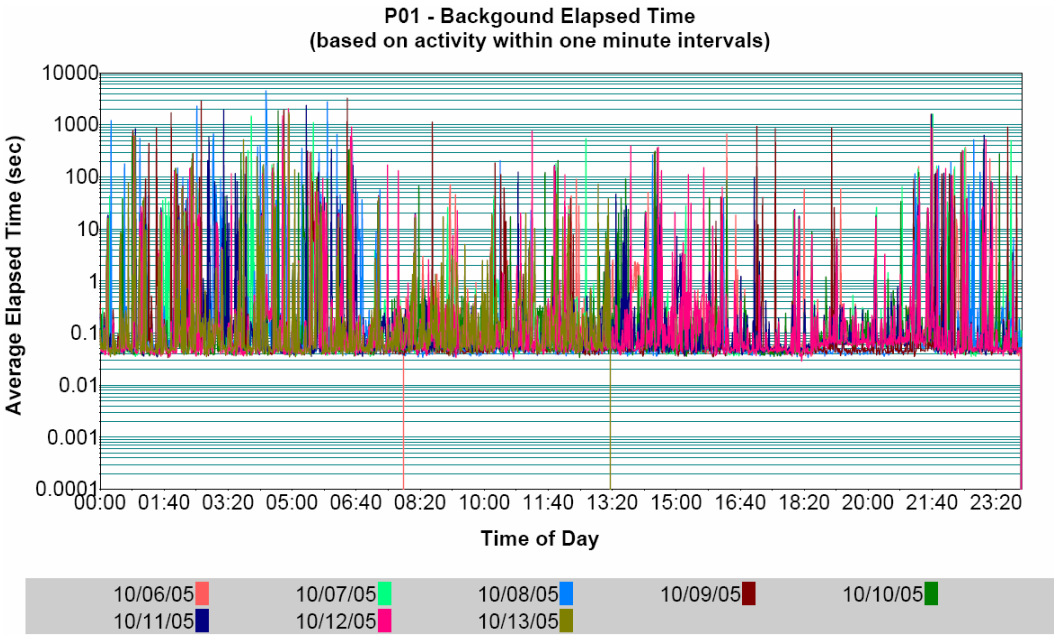
Each data point represents the average dialog step elapsed time within a one-minute interval. Each line represents the data points within a 24-hour calendar day.

Dialog step elapsed time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide:

- Highest average elapsed time within one-minute intervals.
- Average elapsed time within one-minute intervals during the collection period

BACKGROUND ELAPSED TIME



This chart plots the average elapsed time of dialog steps, task type "BKGD", in one-minute intervals over time. The elapsed time of dialog steps ending within an interval are summed and then averaged.

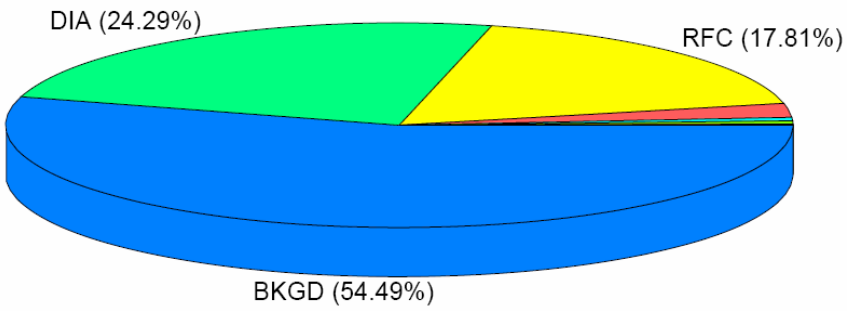
Each data point represents the average dialog step elapsed time within a one-minute interval. Each line represents the data points within a 24-hour calendar day.

Dialog step elapsed time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide:

- Highest average elapsed time within one-minute intervals.
- Average elapsed time within one-minute intervals during the collection period

CPU Time By Task Type



This chart represents the total application server CPU time of dialog steps executed during the collection period, grouped by task type and ordered by percentage of total CPU time.

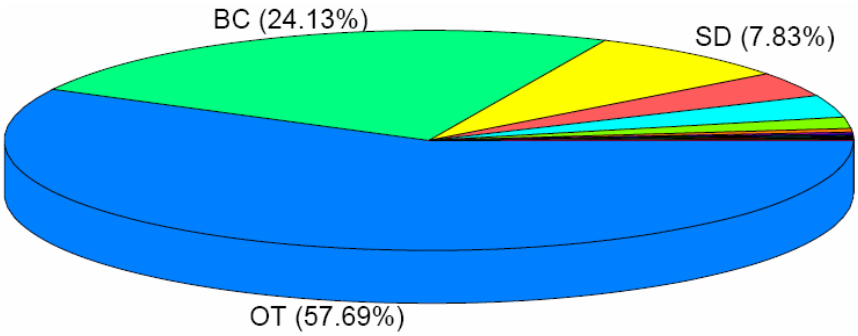
Dialog step CPU time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide CPU time totals grouped by task type and ordered by time in seconds.

Dialog Step Task Types:

DIA	Dialog
UPD	Update (V1)
SPO	Spool
BKGD	Background
ENQ	Enqueue
BUF	Buffer Synchronization
CYCL	Cyclic Background ABAP
UP2	Update (V2)
ALE	Application Link Enabling
RFC	Remote Function Call
CPIC	Common Programming Interface for Communication

CPU TIME BY MODULE



This chart represents the total application server CPU time of dialog steps executed during the collection period, grouped by R/3 application module and ordered by percentage of total CPU time.

Dialog step CPU time is determined by analyzing R/3 application server "stat" file records.

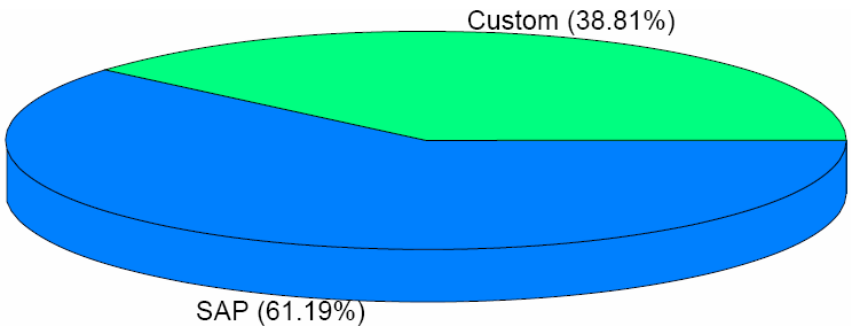
The statistics at the bottom of the report page provide CPU time totals grouped by R/3 application module and ordered by time in seconds.

R/3 Application Modules:

AC Accounting – General
BC Basis Components
CA Cross-Application Components
CO Controlling
CS Customer Service
EC Enterprise Controlling
FI Financial Accounting
IM Investment Management
LE Logistics Execution
LO Logistics - General
MM Materials Management
QM Quality Management
PA Personnel Management
PE Training and Event Management
PM Plant Maintenance
PP Production Planning and Control
PS Project System
PT Personnel Time Management
PY Payroll Accounting
RE Real Estate Management
SD Sales and Distribution
SV Service
SCM-EM Supply Chain Event Management
TR Treasury

OT Other (Not Defined in R/3 Application Hierarchy)

CPU Time By Code Type



This chart represents the total application server CPU time of dialog steps executed during the collection period, grouped by ABAP code type and ordered by percentage of total CPU time.

Dialog step CPU time is determined by analyzing R/3 application server "stat" file records.

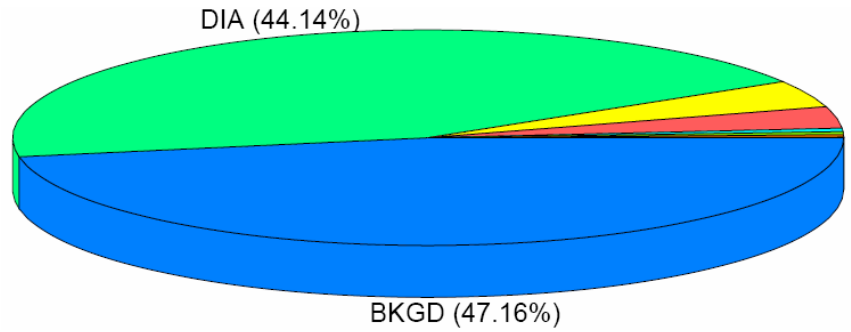
The statistics at the bottom of the report page provide CPU time totals grouped by ABAP code type and ordered by time in seconds.

ABAP Code Types:

- SAP ABAP code provided by SAP.
- Custom ABAP code written by customer.

Custom code is determined by checking the first character of the tcode, module pool, or report name for a 'Y' or 'Z'.

DATABASE WAIT TIME BY TASK TYPE



This chart represents the total database wait time of dialog steps executed during the collection period, grouped by task type and ordered by percentage of total database wait time.

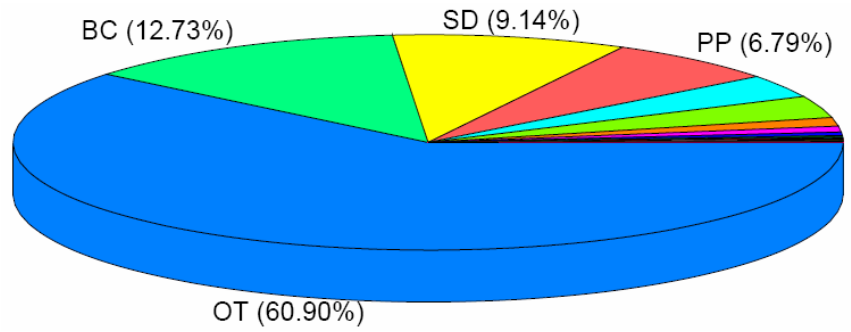
Dialog step database wait time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide database wait time totals grouped by task type and ordered by time in seconds.

Dialog Step Task Types:

DIA	Dialog
UPD	Update (V1)
SPO	Spool
BKGD	Background
ENQ	Enqueue
BUF	Buffer Synchronization
CYCL	Cyclic Background ABAP
UP2	Update (V2)
ALE	Application Link Enabling
RFC	Remote Function Call
CPIC	Common Programming Interface for Communication

DATABASE WAIT TIME BY MODULE



This chart represents the total database wait time of dialog steps executed during the collection period, grouped by R/3 application module and ordered by percentage of total database wait time.

Dialog step database wait time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide database wait time totals grouped by R/3 application module and ordered by time in seconds.

R/3 Application Modules:

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BC Basis Components
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CO Controlling
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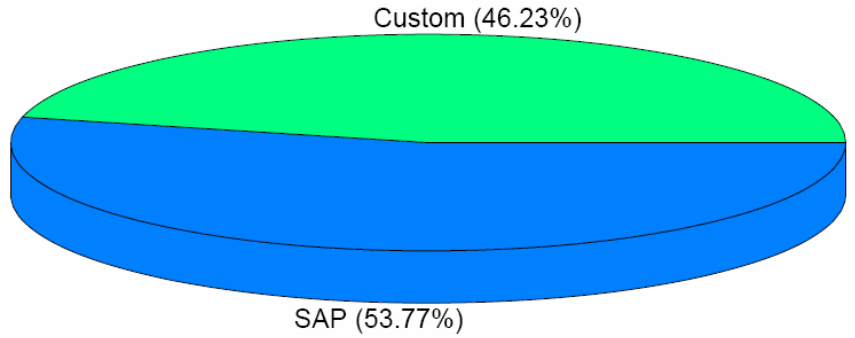
PE Training and Event Management
PM Plant Maintenance
PP Production Planning and Control
PS Project System
PT Personnel Time Management
PY Payroll Accounting
RE Real Estate Management
SD Sales and Distribution
SV Service
SCM-EM Supply Chain Event Management
TR Treasury

OT Other (Not Defined in R/3 Application Hierarchy)

DATABASE WAIT TIME BY CODE TYPE



This chart represents the total database wait time of dialog steps executed during the collection period, grouped by ABAP code type and ordered by percentage of total database wait time.

Dialog step database wait time is determined by analyzing R/3 application server "stat" file records.

The statistics at the bottom of the report page provide database wait time totals grouped by ABAP code type and ordered by time in seconds.

ABAP Code Types:

- SAP ABAP code provided by SAP.
- Custom ABAP code written by customer.

Custom code is determined by checking the first character of the tcode, module pool, or report name for a 'Y' or 'Z'.

TOP TRANSACTIONS BY NUMBER OF DIALOG STEPS

Steps	%	Module	TCode/Report
133350	18.5	BC	SAPMSSY1
45940	6.4	BC	RSPOWP00
44725	6.2	BC	SAPMSSY2
33159	4.6	SD	VA02
22406	3.1	SD	VA22

This table lists the top transactions ordered by the total number of dialog steps executed by each during the collection period.

Table Columns:

Steps	the total number of dialog steps executed by tcode or report during the collection period.
%	represents a transaction's dialog step total as a percentage of the total of all dialog steps executed during the collection period.
Module	lists a transaction's application module.
Tcode/Report	the transaction's tcode or report name.

TOP TRANSACTIONS BY APPLICATION SERVER CPU TIME

Time (s)	%	Steps	Avg (s)	Module	TCode/Report
1143	68.0	1501	0.8	BC	SAPMSSY1
170	10.1	277	0.6	BC	SM50
119	7.1	2	59.9	BC	RSAL_BATCH_TOOL_DISP
31	1.8	43	0.7	OT	GP3YXXBGYH350DTK4FY7
27	1.6	43	0.6	BC	SAPMSSY6
27	1.6	4	6.8	OT	GP3Z9ACASRLENM080SCD

This table lists the top transactions ordered by the total application server CPU time consumed by each during the collection period.

Table Columns:

Time	the total application server CPU time consumed by a transaction in seconds during the collection period.
%	represents a transaction's CPU time total as a percentage of the total of all application server CPU time consumed during the collection period.
Steps	the total number of dialog steps executed by tcode or report during the collection period.
Avg	represents the average application server CPU time consumed per transaction dialog step in seconds.
Module	lists a transaction's application module.
Tcode / Report	the transaction's tcode or report name.

TOP TRANSACTIONS BY DATABASE WAIT TIME

Time (s)	%	Steps	Avg (s)	Module	TCode/Report
17277	74.7	1501	11.5	BC	SAPMSSY1
2804	12.1	36	77.9	BC	DB02
1063	4.6	7	152.0	OT	GP3YVC73ZQ6EINPJF7ZQ
955	4.1	2	478.0	BC	RSAL_BATCH_TOOL_DISP
210	0.9	1	210.5	OT	GP3Z8GEH7D2E5DEPMEU3
108	0.5	252	0.4	BC	SAPMSSY2

This table lists the top transactions ordered by the total database wait time of each during the collection period.

Table Columns:

Time	the total database wait time of a transaction in seconds during the collection period.
%	represents a transaction's database wait time total as a percentage of the total of all database wait time during the collection period.
Steps	the total number of dialog steps executed by tcode or report during the collection period.
Avg	represents the average database time per transaction dialog step in seconds.
Module	lists a transaction's application module.
Tcode/Report	the transaction's tcode or report name.

TOP TRANSACTIONS BY MEMORY CONSUMPTION

Memory (MB)	%	Steps	Avg (MB)	Module	TCode/Report
42600	60.1	1501	28.4	BC	SAPMSSY1
4981	7.0	43	115.9	OT	GP3YXXBGYH350DTK4FY7
4808	6.8	277	17.4	BC	SM50
2891	4.1	86	33.6	OT	GP3Z80HRDX25FOQKR0YQ
2461	3.5	90	27.4	OT	RSA1
1635	2.3	25	65.4	OT	GP3YI6BXDYD4OYDRNJNW

This table lists the top transactions ordered by the total application server memory consumed by each during the collection period.

Table Columns:

Memory	the total memory consumed by a transaction in megabytes during the collection period.
%	represents a transaction's memory consumption total as a percentage of the total of all memory consumed during the collection period.
Steps	the total number of dialog steps executed by tcode or report during the collection period.
Avg	represents the average memory consumed per transaction dialog step in megabytes.
Module	lists a transaction's application module.
Tcode / Report	the transaction's tcode or report name.

TOP TRANSACTIONS BY AVERAGE DIALOG RESPONSE TIME

Avg (s)	Steps	Time (s)	Module	TCode/Report
78.032	36	2809	BC	DB02
2.443	89	217	OT	RSA1
1.652	41	67	BC	SESSION_MANAGER
1.480	30	44	BC	ST22
1.213	16	19	OT	RRMX
1.100	31	34	OT	RSPC

This table lists the top transactions ordered by average dialog response time of each during the collection period.

Table Columns:

Avg	represents the average dialog response time per transaction dialog step in seconds.
Steps	the total number of dialog steps executed by tcode or report during the collection period.
Time	the total response time of a transaction in seconds during the collection period.
Module	lists a transaction's application module.
Tcode/Report	the transaction's tcode or report name.

TOP USERS BY NUMBER OF DIALOG STEPS

Steps	%	User ID
20865	21.7	SAPSYS
13934	14.5	APCONVERT
13748	14.3	POCONVERT
7340	7.6	WF-BATCH
6851	7.1	GLCONVERT
6370	6.6	ARCONVERT

This table lists the top users ordered by the total number of dialog steps executed by each during the collection period.

Table Columns:

Steps	the total number of dialog steps executed by a user during the collection period.
%	represents a user's dialog step total as a percentage of the total of all dialog steps executed during the collection period.
User ID	SAP User ID.

TOP USERS BY APPLICATION SERVER CPU TIME

Time (s)	%	Steps	Avg (s)	User ID
7559	33.3	6851	1.1	GLCONVERT
5152	22.7	13934	0.4	APCONVERT
1911	8.4	13748	0.1	POCONVERT
1683	7.4	2245	0.7	FMCONVERT
982	4.3	749	1.3	COCONVERT
971	4.3	6370	0.2	ARCONVERT

This table lists the top users ordered by the total application server CPU time consumed by each during the collection period.

Table Columns:

Time	the total application server CPU time consumed by a user in seconds during the collection period.
%	represents a user's CPU time total as a percentage of the total of all application server CPU time consumed during the collection period.
Steps	the total number of dialog steps executed by a user during the collection period.
Avg	represents the average application server CPU time consumed per user dialog step in seconds.
User ID	SAP User ID.

TOP USERS BY DATABASE WAIT TIME

Time (s)	%	Steps	Avg (s)	User ID
7649	41.7	13934	0.5	APCONVERT
3204	17.5	6851	0.5	GLCONVERT
1816	9.9	13748	0.1	POCONVERT
1496	8.1	6370	0.2	ARCONVERT
976	5.3	7340	0.1	WF-BATCH
829	4.5	3428	0.2	AACONVERT

This table lists the top users ordered by the total database wait time of each during the collection period.

Table Columns:

Time	the total database wait time of a user in seconds during the collection period.
%	represents a user's database wait time total as a percentage of the total of all database wait time during the collection period.
Steps	the total number of dialog steps executed by a user during the collection period.
Avg	represents the average database time per user dialog step in seconds.
User ID	SAP User ID.

TOP USERS BY MEMORY CONSUMPTION

Memory (MB)	%	Steps	Avg (MB)	User ID
229386	16.4	3428	66.9	AACONVERT
179642	12.9	6370	28.2	ARCONVERT
168957	12.1	6851	24.7	GLCONVERT
157063	11.3	13748	11.4	POCONVERT
156372	11.2	13934	11.2	APCONVERT
141609	10.1	4369	32.4	MMCONVERT

This table lists the top users ordered by the total application server memory consumed by each during the collection period.

Table Columns:

Memory	the total memory consumed by a user in megabytes during the collection period.
%	represents a user's memory consumption total as a percentage of the total of all memory consumed during the collection period.
Steps	the total number of dialog steps executed by a user during the collection period.
Avg	represents the average memory consumed per user dialog step in megabytes.
User ID	SAP User ID.

TOP USERS BY AVERAGE DIALOG RESPONSE TIME

Avg (s)	Steps	Time (s)	User ID
4.506	720	3244	COCONVERT
4.125	6092	25132	GLCONVERT
3.482	4239	14760	APCONVERT
2.466	2161	5330	FMCONVERT
1.039	31	32	GMCONVERT
0.822	6786	5579	POCONVERT

This table lists the top transactions ordered by average dialog response time of each during the collection period.

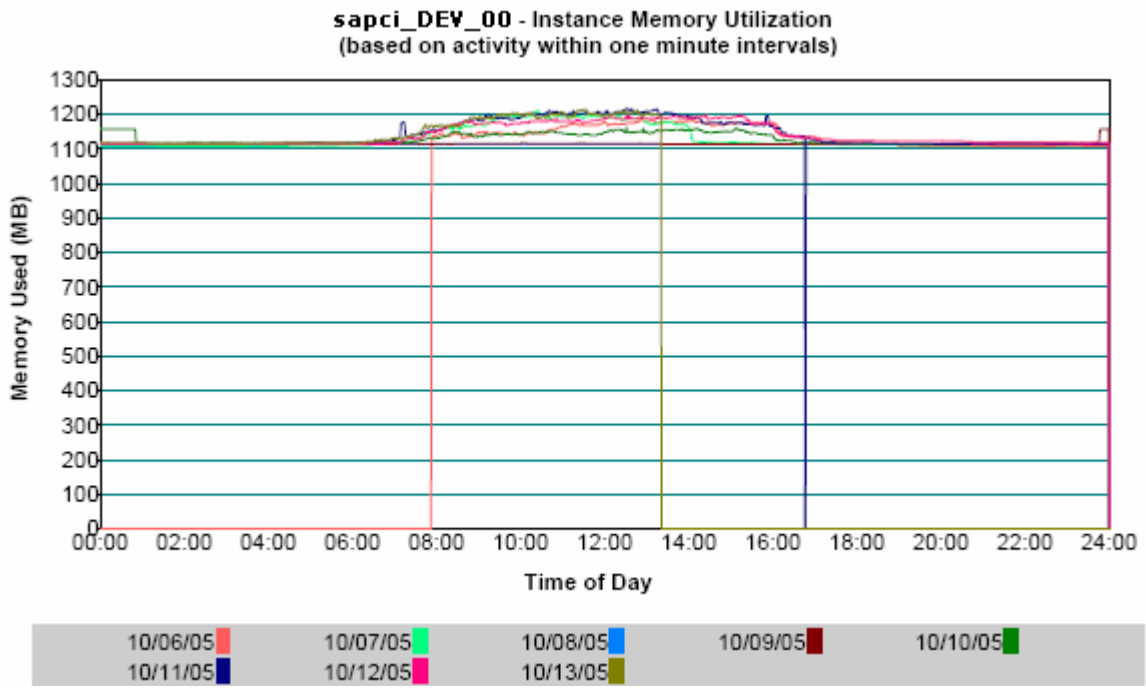
Table Columns:

Avg	represents the average dialog response time per user dialog step in seconds.
Steps	the total number of dialog steps executed by a user during the collection period.
Time	the total response time of a user in seconds during the collection period.
User ID	SAP User ID.

Application Server Charts and Tables

- Memory Utilization
- Buffer Statistics
- Memory Areas
- Task Type Statistics
- Top Table Statistics
- Work Process Statistics

MEMORY UTILIZATION



This chart plots the amount of memory used by the R/3 instance in one-minute intervals over time.

Each data point represents the sum of:

- total work process size
- total SAP executable size
- buffer space used
- roll area used
- extended memory used
- heap memory used

Each line represents the data points within a 24-hour calendar day.

The statistics at the bottom of the report page provide the peak amount of memory used.

This chart does not represent total memory utilization on the host.

BUFFER STATISTICS

Buffer Name	Buffer Hit Ratio (%)	Database Quality (%)	Free Space (%)	Free Entries (%)	Object Swaps
OTR	100.00	100.00	100.00	100.00	0
Initial Record	99.98	99.98	62.55	3.90	1559
Calendar	99.96	100.00	79.50	36.00	0
Generic Key	99.92	99.81	5.42	70.76	63
Short NameTab	99.86	99.86	62.20	59.27	0
CUA	99.73	99.87	19.12	66.12	7680
Field Description	99.72	99.72	13.22	79.56	65999
ABAP Program	99.65	99.48	2.27	89.82	273424
Screen	99.61	99.61	4.78	76.04	14524
Single Record	99.13	99.13	84.98	56.80	0
ESM	98.13	100.00	99.17	99.95	0
Table Definition	98.02	98.02	50.64	50.65	0
Export/Import	79.50	100.00	31.42	62.59	27324

This table lists the R/3 buffers and their statistics ordered by hit ratio since application server start.

Table Columns:

Buffer Hit Ratio	the percentage of requests satisfied by data stored in the buffer.
Database Quality	the percentage of database accesses satisfied with saved database calls.
Free Space	the percentage free space within the buffer.
Free Entries	the percentage of free addresses for objects.
Object Swaps	the number occurrences where objects have been displaced from the buffer.

MEMORY AREAS

Memory	Size (KB)	Max Used (KB)	Max Used (%)
Roll Area	262144	25816	9
Paging Area	262144	262136	99
Extended Memory	3132416	2883584	92
Heap Memory	750709760	0	0

This table lists the R/3 memory areas and their statistics since application server start.

Table Columns:

Memory	the name of the R/3 memory area.
Size	the allocated size of the memory area.
Max Used (KB)	the maximum amount of memory area used.
Max Used (%)	the maximum percentage of memory area used.

TASK TYPE STATISTICS

Task Type	CPU Time (s)	DB Wait Time (s)
Dialog	17643	152462
Update	174	4093
Spool	27	341
Background	6828	46065
Enqueue	0	0
Buffer Sync	7	159
Cyclic ABAP	395	135
Update2	52	954
ALE	0	0
RFC	5205	1313
CPIC	0	0
Total	30332	205522

This table lists the R/3 task types and their accumulated application server CPU and Database Wait time since application server start.

Table Columns:

Task Type	the name of the R/3 task type.
CPU Time	the accumulated application server CPU time.
DB Wait Time	the accumulated database wait time.

TOP TABLE STATISTICS

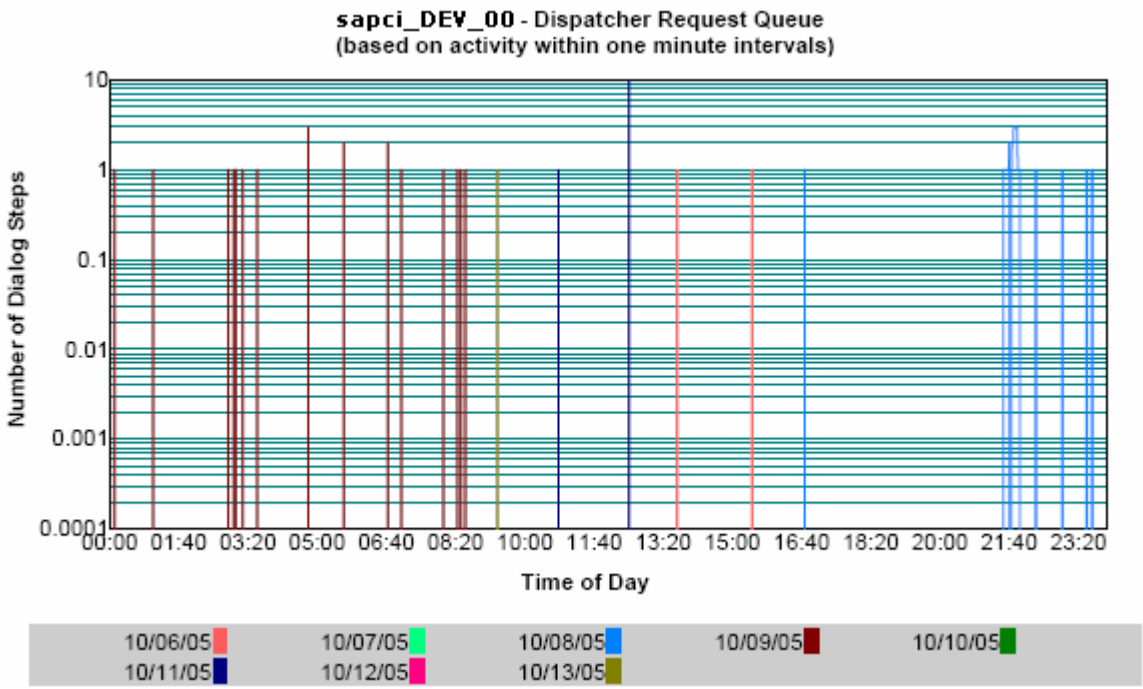
Table Name	Total Count	Direct Count	Direct Quality (%)	Sequential Count	Sequential Quality (%)
DDNTF	1019764535	1019687976	100.00	76559	0.00
DDNTT	181407462	181407462	99.60	0	100.00
UST12	84706581	0	100.00	84706581	99.92
CABN	48039870	0	100.00	48039870	0.00
T006	20224803	20224237	100.00	566	100.00
USRBF2	10281088	0	100.00	10281088	99.48

This table lists the top tables ordered by total reads (direct + sequential) of each since application server start.

Table Columns:

Total Count	the sum of direct count and sequential count.
Direct Count	the total number of direct (indexed) reads.
Direct Quality	the R/3 buffer quality of the direct reads.
Seq. Count	the total number of sequential (scan) reads.
Seq. Quality	the R/3 buffer quality of the sequential reads.

WORK PROCESS STATISTICS



This chart plots the total number of queued dialog steps to be dispatched to a work process in one-minute intervals over time.

Each data point represents the total number of queued dialog steps within a one-minute interval. Each line represents the data points within a 24-hour calendar day.

The statistics at the bottom of the report page provide the peak number of queued dialog steps for each work process type during the collection period.

Host Charts and Tables

- Top Processes
- CPU Utilization Summary
- Memory Utilization Summary
- Disk Utilization Summary
- CPU Utilization
- Paging Rate
- Memory Utilization
- Swap Utilization
- Disk Utilization
- Disk I/O Rate
- Top Disk

TOP PROCESSES

Time	User	PID	Command
266:30	p01adm	1241	dw.sapP01_D01
240:45	p01adm	8120	dw.sapP01_D01
215:05	p01adm	30338	dw.sapP01_D01
206:16	p01adm	10453	dw.sapP01_D01
144:05	p01adm	11352	dw.sapP01_D01
123:54	p01adm	1242	dw.sapP01_D01

This table lists the top processes reported by the operating system ordered by accumulated CPU time.

Table Columns:

Time	the accumulated CPU time in mmm:ss.
User	the operating system user id.
PID	the process id.
Command	the process name.

CPU UTILIZATION SUMMARY

Host	Aggregate Average Util (%)	Peak 8Hr Avg Util (%)	Peak 1Hr Avg Util (%)	Peak Minute Util (%)
sapa01	1	9	12	38
sapa02	0	4	11	31
sapa03	2	14	21	55
sapp01	10	27	40	99

This table lists the hosts and their CPU utilization averages during the collection period.

Table Columns:

Aggregate Avg	the average host CPU utilization within the entire collection period.
Peak 8Hr Avg	the peak average host CPU utilization within a eight-hour interval.
Peak 1Hr Avg	the peak average host CPU utilization within a one-hour interval.
Peak Minute	the peak average host CPU utilization within a one-minute interval.

MEMORY UTILIZATION SUMMARY

Host	Aggregate Average Util (%)	Peak 8Hr Avg Util (%)	Peak 1Hr Avg Util (%)	Peak Minute Util (%)
sapa01	92	97	97	97
sapa02	95	96	96	97
sapa03	95	97	97	97
sapp01	95	96	96	98

This table lists the hosts and their memory utilization averages during the collection period.

Table Columns:

Aggregate Avg the average host memory utilization within the entire collection period.

Peak 8Hr Avg the peak average host memory utilization within a eight-hour interval.

Peak 1Hr Avg the peak average host memory utilization within a one-hour interval.

Peak Minute the peak average host memory utilization within a one-minute interval.

DISK UTILIZATION SUMMARY

Host	Aggregate Average Util (%)	Peak 8Hr Avg Util (%)	Peak 1Hr Avg Util (%)	Peak Minute Util (%)
sapa01	0	2	7	50
sapa02	0	0	1	53
sapa03	78	79	79	80
sapp01	99	99	100	100

This table lists the hosts and their disk utilization averages during the collection period.

Table Columns:

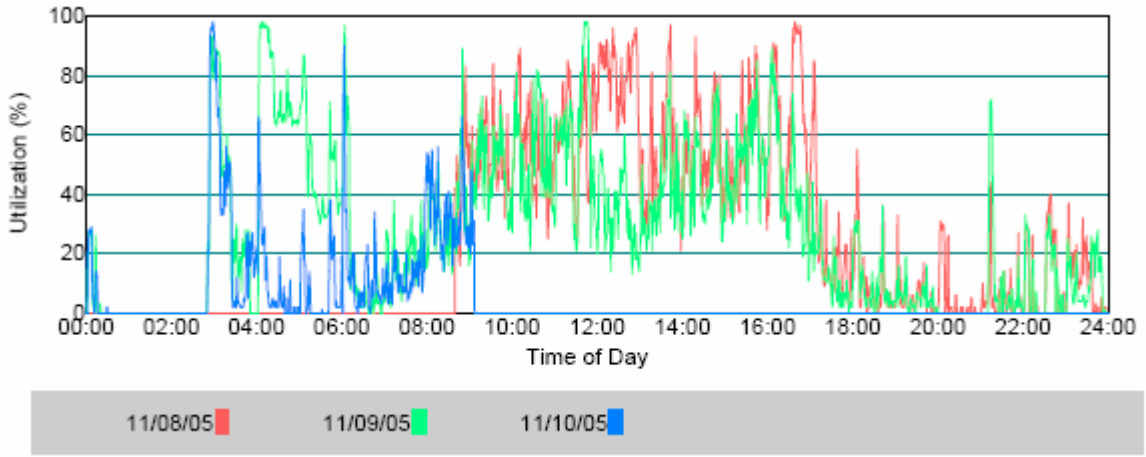
Aggregate Avg the average host disk utilization within the entire collection period.

Peak 8Hr Avg the peak average host disk utilization within a eight-hour interval.

Peak 1Hr Avg the peak average host disk utilization within a one-hour interval.

Peak Minute the peak average host disk utilization within a one-minute interval.

CPU UTILIZATION



This chart plots average host CPU utilization in one-minute intervals over time.

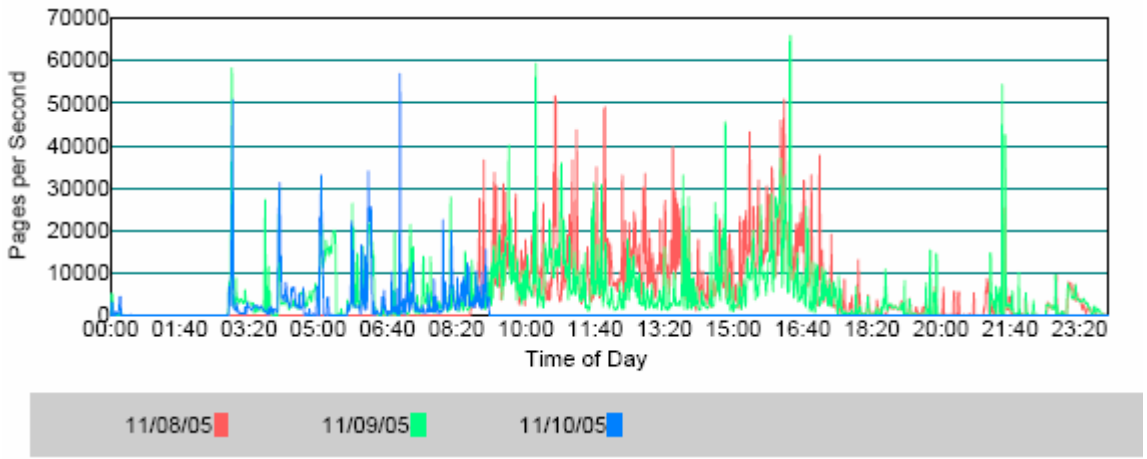
Each data point represents the average host CPU utilization within a minute interval. Each line represents the data points within a 24-hour calendar day.

The host CPU utilization is provided by the R/3 operating system collector, SAPOSCOL.

The statistics below the chart provide:

- Peak one-hour average host CPU utilization.
- Peak eight-hour average host CPU utilization.

PAGING RATE

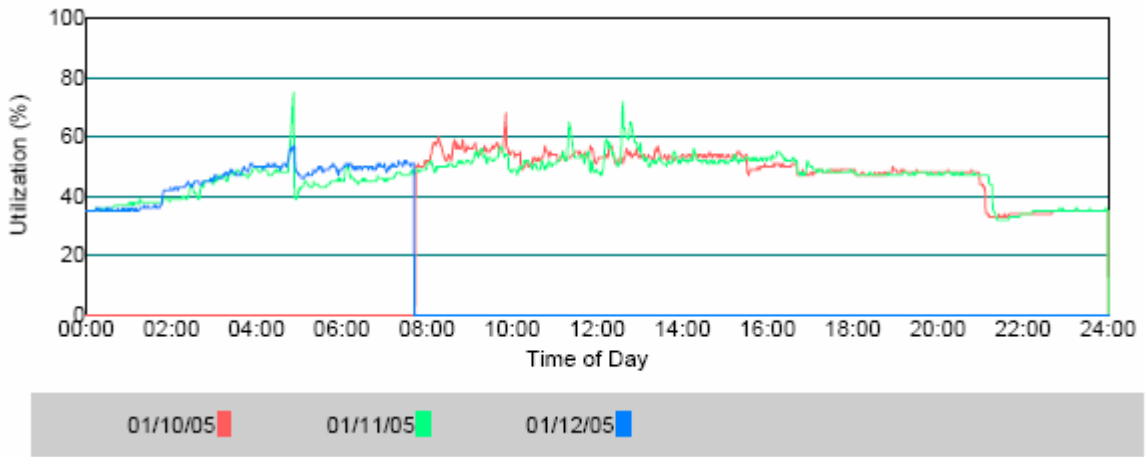


This chart plots the average host paging rate in one-minute intervals over time.

Each data point represents the average host paging rate within a minute interval. Each line represents the data points within a 24-hour calendar day.

The host paging rate is provided by the R/3 operating system collector, SAPOSCOL.

MEMORY UTILIZATION



This chart plots average host memory utilization in one-minute intervals over time.

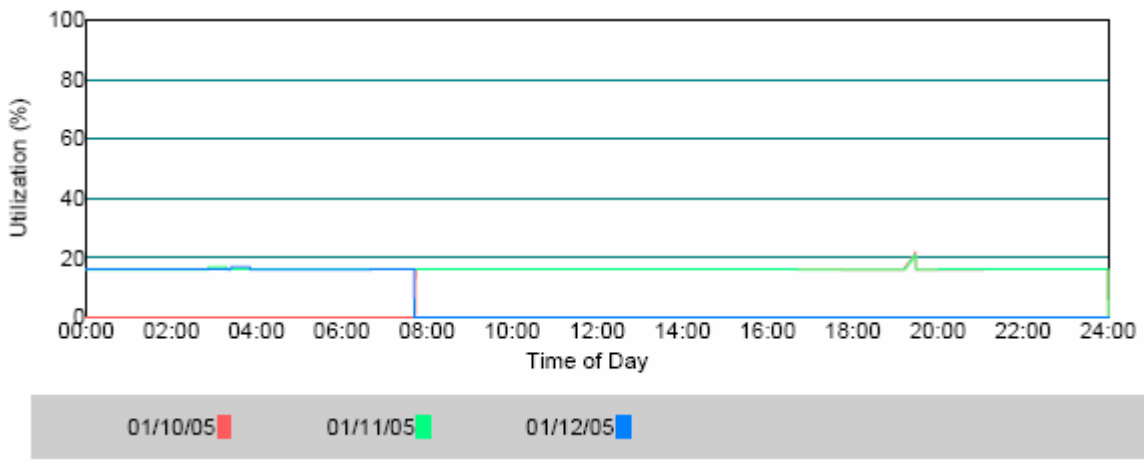
Each data point represents the average host memory utilization within a minute interval. Each line represents the data points within a 24-hour calendar day.

The host memory utilization is provided by the R/3 operating system collector, SAPOSCOL.

The statistics below the chart provide:

- Peak one-hour average host memory utilization.
- Peak eight-hour average host memory utilization.

SWAP UTILIZATION

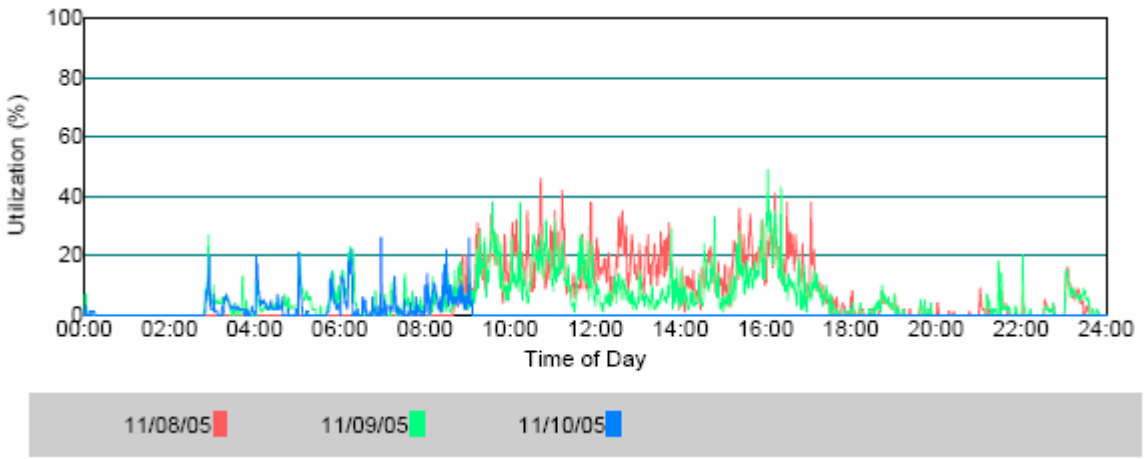


This chart plots average host swap utilization in one-minute intervals over time.

Each data point represents the average host swap utilization within a minute interval. Each line represents the data points within a 24-hour calendar day.

The host swap utilization is provided by the R/3 operating system collector, SAPOSCOL.

DISK UTILIZATION



This chart plots average host disk utilization in one-minute intervals over time.

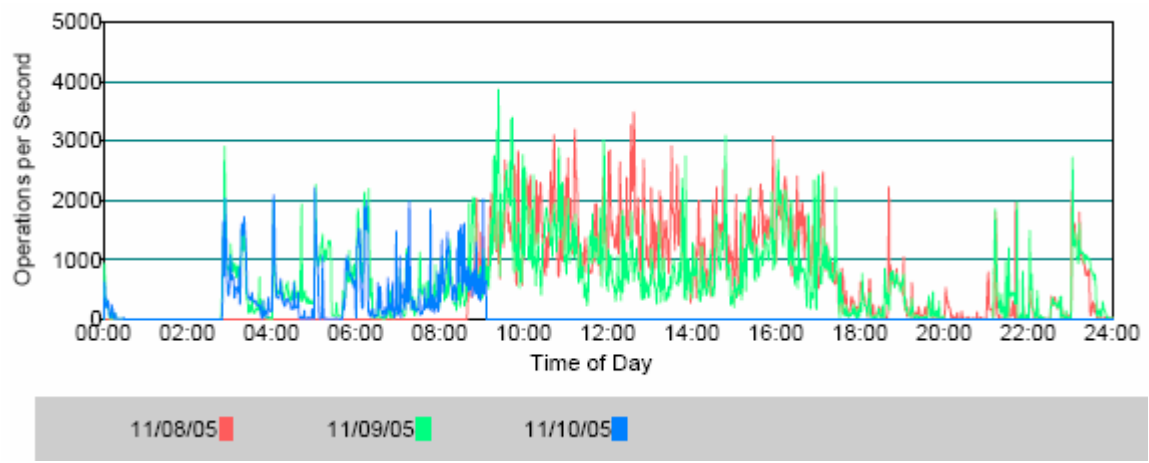
Each data point represents the average host disk utilization within a minute interval. Each line represents the data points within a 24-hour calendar day.

The host disk utilization is provided by the R/3 operating system collector, SAPOSCOL.

The statistics below the chart provide:

- Peak one-hour average host disk utilization.
- Peak eight-hour average host disk utilization.

DISK I/O RATE



This chart plots average host disk I/O rate in one-minute intervals over time.

Each data point represents the average host disk I/O rate within a minute interval. Each line represents the data points within a 24-hour calendar day.

The host disk I/O rate is provided by the R/3 operating system collector, SAPOSCOL.

TOP DISK

Host	Disk	High Count	Moderate Count	Peak Util (%)	Average Util (%)
sapci	hdisk40	40	24	95	31
sapci	hdisk16	16	16	78	15
sapci	hdisk32	11	7	78	11
sapci	hdisk10	6	7	90	6
sapci	hdisk30	4	12	89	10
sapci	hdisk39	3	7	48	5

This table lists the most heavily utilized disk ordered by high count during the collection period.

Table Columns:

Host	the name of the host owning the disk.
Disk	the name of the disk.
High Count	the number of one-minute intervals where average disk utilization exceeded 40%.
Moderate Count	the number of one-minute intervals where average disk utilization was between 20% - 40%.
Peak Util	the peak average disk utilization within a one-minute interval.
Average Util	the average disk utilization within the entire collection period.