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Chapter 1 - Introduction

About this document

This document covers the installation of the SAS/ACCESS Interface to SAP BW Software, Release 8.2. You may also need to review the SAS/ACCESS Interface to SAP BW: User's Guide, Release 8.2, and the SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions to assist you with the SAS/ACCESS Interface to SAP BW installation.

The SAS/ACCESS Interface to SAP BW: User's Guide, Release 8.2 is available at the following location:

http://www.sas.com/service/library/onlinedoc/access/

How to use this book

Chapter 1 provides an overview of the architecture of the SAS/ACCESS Interface to SAP BW. Read this chapter to determine which configuration to use for your installation.

Chapter 2 listed the installation requirements and prerequisites. Also included are some tips, such as how to set up and test prerequisites before proceeding with the installation.

Chapter 3 explains the installation of the SAS/ACCESS Interface to SAP BW step by step.

Chapter 4 explains how to start the interface and how to verify the installation.

In the appendices there are two checklists that simplify and document installation.

> Pre-installation checklist
>
> The pre-installation checklist must be completed prior to installation. Do not proceed with installation until all the items on the checklist are correctly completed.
>
> Installation checklist
>
> During installation, complete the installation checklist. This information is important as it documents the installation and facilitates upgrades etc.

These checklists are important as they assist in the successful installation of the SAS/ACCESS Interface to SAP BW.

Configurations of the SAS/ACCESS Interface to SAP BW Software

The SAS/ACCESS Interface to SAP BW Software can be configured in many different ways. This section describes its components and basic configurations.

Note that for the purposes of installation and configuration, SAP BW can be treated as a separate R/3 System.

Components

The components that make up the SAS/ACCESS Interface to SAP BW are

1. SAS/ACCESS Interface to SAP BW Application

2. Data Dictionary Extract from SAP BW

3. Extracted SAP BW InfoCubes and ODS tables

SAS/ACCESS Interface to SAP BW requires SAS/ACCESS Interface to R/3 to be installed on each machine where SAS/ACCESS Interface to SAP BW is installed. The SAS RFC Server or the SAS RFC Batch Server component of the SAS/ACCESS Interface to R/3 is required for the SAS/ACCESS Interface to SAP BW to connect to SAP BW via the SAP BW Application Server.

1. SAS/ACCESS Interface to SAP BW Application
This is the user interface to navigate the metadata, store selections, and extract SAP BW InfoCubes.

2. Data Dictionary Extract from SAP BW
This is a copy of metadata from the SAP BW Data Dictionary. The metadata is stored in SAS data sets that provide information about tables, fields, InfoCubes, ODS objects and InfoObjects in SAP BW.

When loading the metadata, the Data Dictionary Extract is usually installed on the same box as the user interface of the SAS/ACCESS Interface to SAP BW or on a file server. The Data Dictionary Extract can be on a separate machine provided that machine has

- SAS System

- SAS/SHARE or SAS/CONNECT.

3. Extracted SAP BW InfoCubes and ODS tables
The SAP BW InfoCubes and ODS tables are extracted by the SAS/ACCESS Interface to SAP BW Application. SAS Views or SAS data sets are generated for all SAP BW tables that make up an InfoCube in SAP BW. SAS data sets are generated using the SAS Views or data sets to define the star schema tables of the InfoCube.

To extract SAP BW InfoCubes or ODS tables on a particular machine, the SAS/ACCESS Interface to SAP BW must be installed. The extraction can be run in batch mode.

Extracted SAP BW InfoCubes can be used in batch mode.

SAS/ACCESS Interface to R/3 and SAS RFC Server
As previously explained, SAS/ACCESS Interface to R/3 and the SAS RFC Server are required for the SAS/ACCESS Interface to SAP BW. For most tasks, the SAS RFC Server is sufficient; however, if you are extracting metadata or large InfoCubes, the SAS RFC Batch Server may be used to avoid timeouts. For information on installing the SAS/ACCESS Interface to R/3, the SAS RFC Server, and the SAS RFC Batch Server, refer to the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

The same SAS RFC Server can be used to read both R/3 tables (using the SAS/ACCESS Interface to R/3) and SAP BW InfoCubes (using SAS/ACCESS Interface to SAP BW).

For example, if the SAS/ACCESS Interface to R/3 is already installed to read R/3 tables, and SAP BW InfoCubes are on the same physical machine, then the already set-up SAS RFC Server can also be used by the SAS/ACCESS Interface to SAP BW.

However, in certain situations two SAS RFC Servers may be required. These situations correspond to those configurations where two SAS RFC Servers would be required to read R/3 tables from two separate R/3 Systems. For more information, see the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

SAP BW (Application Server)
The SAS RFC Server communicates with SAP BW via the SAP BW Application Server. The installation of the SAS/ACCESS Interface to SAP BW includes a number of ABAP/4 objects and appropriate connection parameters. For information on installing these objects and the connection parameters, refer to the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

Basic Configurations

Figure 1 represents the basic configuration where all components of the SAS/ACCESS Interface to SAP BW are located on the same machine. In Figure 2, the RFC Server is installed on the same host as the SAP BW Application Server.
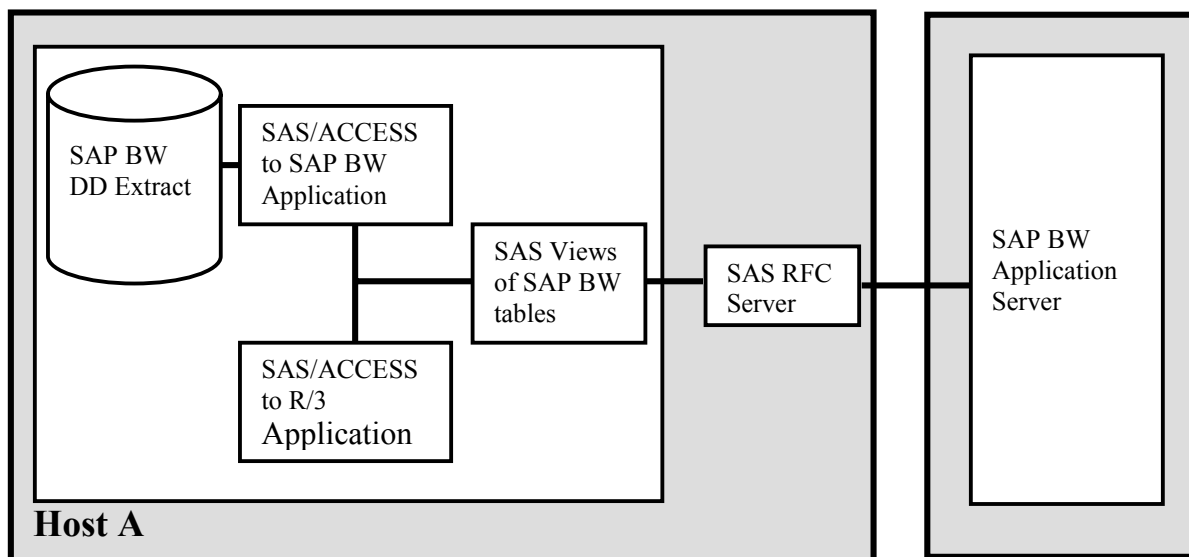

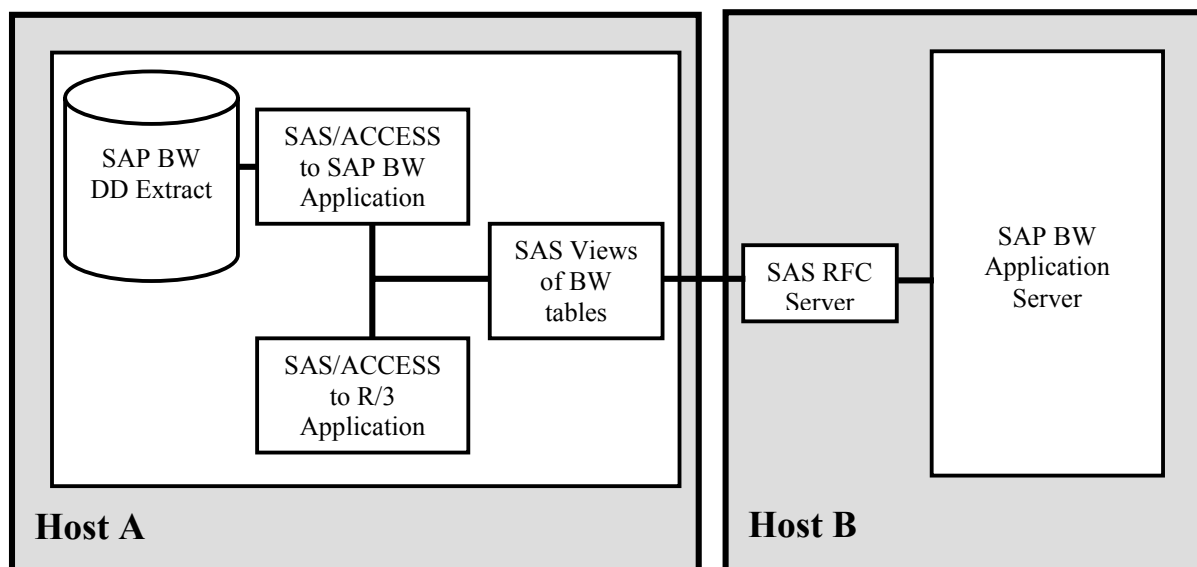*Figure 1 - Basic configuration (1) of the SAS/ACCESS Interface to SAP BW*

Figure 2 - Basic configuration (2) of the SAS/ACCESS Interface to SAP BW

Other Configurations

If a basic configuration cannot be used, other configurations are available. In general, we recommend you use as few machines as possible to minimize network traffic and offer better system performance.

As mentioned previously, for installation and configuration treat SAP BW as a separate R/3 System. Use the information given in *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions* to work out a suitable configuration.

Communications

For details of the communication protocols used by the SAS RFC Server, refer to the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

Related Publications

- *SAS/ACCESS® Interface To SAP BW: User's Guide, Release 8.2*

- *SAS/ACCESS® Interface to R/3, Release 8.2 Installation Instructions*

- *SAS/ACCESS® Interface to R/3 User's Guide Release 3.0, First Edition*

- *SAS® Companion for the UNIX Environments, Version 8*

- *SAS® Companion for the Microsoft Windows Environment, Version 8*

In addition the *SAS Installation Instructions* and *System Requirements* for the respective platform may be useful.

Chapter 2 - Pre-Installation

Overview

This chapter outlines the prerequisites to install and run the SAS/ACCESS Interface to SAP BW. Some of these prerequisites require the involvement of other staff, such as the SAP BW administrator.

System Requirements

The installer requires valid operating system user IDs and passwords. For a multi-machine installation, appropriate access to the network and all machines must be included. For Windows NT, administrator privilege is required.

Operating System

SAS/ACCESS Interface to SAP BW

For a list of operating system requirements for the SAS/ACCESS Interface to SAP BW user interface, see the system requirements for Release 8.2 of the SAS System.

The SAS System

SAS/ACCESS Interface to SAP BW

See the system requirements for Release 8.2 of the SAS System.

Required SAS Products

- Base SAS

- SAS/ACCESS Interface to R/3 Software

- SAS/ACCESS Interface to SAP BW Software

In addition, to use the Export OLAP Metadata feature, either SAS/MDDB Server and SAS/EIS or SAS/OLAP Server is needed. Also, to use SAS client/server support, SAS/CONNECT is needed.

SAP BW

Release

SAP BW, Release 2.0 B

Please see SAS/ACCESS Interface to R/3 Installation Instructions for further R/3 system requirements.

Disk Space

Refer to the System Requirements documents for the amount of space needed for the SAS/ACCESS Interface to SAP BW on the various UNIX and Windows platforms.

Additional disk space is required for the data dictionary extract. The space requirement varies with the size of SAP BW.

The SAS RFC Server space requirement is 1.5Mb.

Connectivity

The SAS RFC Server and the SAS Data Step use TCP/IP socket programming. For further information, refer to *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

Authorization Profiles

To install and use the SAS/ACCESS Interface to R/3 a user ID with certain authorizations is required. For further information, refer to *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

SAS/ACCESS Interface to SAP BW requires additional authorizations:

Object	Minimum Requirement for Values	Example for predefined Authorization
S_RS_ADMWB (Administrator Workbench – Objects)	RSADMWBOBJ: *INFOOBJECT* ACTVT: *3, 16*	S_WB__IOB_SHOW

Chapter 3 - Installation

Overview

During the installation of the SAS System Release 8.2, select the SAS/ACCESS Interface to SAP BW along with the required SAS products (Base SAS and SAS/ACCESS Interface to R/3 System). Refer to the installation instructions for the SAS System Release 8.2 for your operating system.

Installation

Before you can configure and work with SAS/ACCESS Interface to SAP BW, you have to install SAS/ACCESS Interface to R/3 and the SAS RFC Server.

Note: You will need to install the SAS Batch RFC Server if your SAS/ACCESS Interface to SAP BW extraction job exceeds the time limit for dialog processes on your SAP BW system. This may occur with full metadata extracts or large InfoCubes or ODS tables.

Please see the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions* for installing the SAS RFC Server, the SAS Batch RFC Server, and for installing the R/3 components on the SAP BW Application server.

Note 1: If you are installing SAS/ACCESS Interface to R/3 on a UNIX platform, you may encounter more than one SAS/ACCESS Interface to R/3 option. The first option, SAS/ACCESS Interface to R/3 includes the BAPI Connector, and the SAS/ACCESS Interface to R/3 – BAPI Connector install option only installs the BAPI Connector. You need to choose option 1 to run SAS/ACCESS Interface to SAP BW.

Note 2: The ABAP/4 function modules "Z_SAS_G_SET_LIST_SELECT" and "Z_SAS_G_SET_TREE_IMPORT" won't install correctly because some objects are missing in BW's R/3 instance. The error message during installation can be ignored.

Configuration of SAS/ACCESS Interface to SAP BW

Step 1, Start the RFC Server or the Batch RFC Server

Start the SAS RFC Server or the Batch RFC Server as described in the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

Note: The SAS RFC Server and the SAS Batch RFC Server on supported Windows operating systems require that the librfc32.dll file is available. This file is installed when the SAPGUI is installed, and can be copied to clients which do not have the SAPGUI installed. For more information, please see the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

Step 2, Logon to SAP BW

Start a SAS session and in the command line enter

```
%bwaccess
```

This starts the SAS/ACCESS Interface to SAP BW. Refer to the SAS/ACCESS Interface to SAP BW: User's Guide, Release 8.2 for more information about using and managing logon profiles, and refer to SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions to review the communication requirements.

Double-click the **Logon** icon. In the Logon to SAP BW window and the Advanced Parameters window, enter the connection parameters. Table 1 lists the connection parameters and a description. Refer to the *SAS/ACCESS Interface to SAP BW: User's Guide, Release 8.2* for more information about using and managing logon profiles, and refer to *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions* to review the communication requirements.

(To review the communication requirements, refer to *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*).

Parameter	Comment
Connection ID	SAS internal connection identifier (7 characters, SAS name). Default: CONN1
TCP/IP host	name of the RFC Server host; default: localhost
TCP/IP port	port number for RFC Server; default: 6991
User ID (RFC)	mandatory, SAP BW user ID
Password (RFC)	mandatory, SAP BW password
Client (RFC)	mandatory, SAP BW client. Client is always three characters - include leading zeros e.g. 040.
Language (RFC)	mandatory, SAP BW logon language.
Destination (RFC)	name of the RFC destination as defined in a 'sideinfo' file. If a 'sideinfo' file is used, specify the RFC destination and leave the RFC host field blank. Either the RFC destination or the RFC host must be specified, but not both.
Host (RFC)	host name of the SAP BW target system. Specify the host name in this field only if no 'sideinfo' file is used. Either the RFC destination or the RFC host must be specified, but not both.
System number	system number of the SAP BW target system. The default value is 0.
Gateway service	the gateway service of the intermediate gateway of the form sapgwnn where nn is the system number. The default service is sapgw00.
Gateway host	the hostname of the intermediate gateway

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SAP BW function module	the SAP BW function module used for the SAS/ACCESS Interface to SAP BW. Default: Z_SAS_READ_TABLE_CPIC.
User ID (CPIC)	the SAP BW user ID used internally to communicate between the ABAP/4 function module and the ABAP/4 program to read the SAP BW data. This user ID must be CPIC enabled. Do not enter the CPIC user ID, if the RFC user ID can be used as a default.
Client (CPIC)	SAP BW client, for explanation see User ID (CPIC).
Password (CPIC)	SAP BW password, for explanation see User ID (CPIC).
Language (CPIC)	SAP BW logon language, for explanation see User ID (CPIC).
Destination (CPIC)	the name of the CPIC destination internally used for communication between the ABAP/4 function module and the ABAP/4 program. The destination must be defined in the SAP BW table TXCOM. Default: SELF.

Table 1 - Connection parameters

Note 1: More than one R/3 System and SAP BW can run on the same machine. If no `sideinfo` file is available, set the system number (SYS) and gateway service (GWSERV) fields in the connection parameters to access the correct SAP BW system.

Note 2: The `sideinfo` file contains side information to communicate between the SAS RFC Server and SAP BW (Application Server) (ABAP/4 function module). Its contents are similar to the connection parameters in the SAP BW table TXCOM. For example,

```
DEST=mydest
LU=host1
TP=sapdp00
GWHOST=host1
GWSERV=sapgw00
PROTOCOL=I
```

Please see the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions* about using a `sideinfo` file with the SAS RFC Server.

Step 3, Extract the Metadata

The SAS/ACCESS Interface to SAP BW uses a copy of metadata SAP BW for navigation and to generate the program to read SAP BW InfoCubes and ODS tables. Extracting the necessary metadata from the SAP BW data dictionary is part of the installation process.

If new SAP BW InfoCubes or ODS tables are added or the structure of existing ones are changed, re-extract the metadata to reflect those changes.

A wizard interface guides you through loading the metadata from SAP BW into SAS. To start the wizard, double click the **Wizard to Load Metadata** icon. You can run the metadata or InfoCube extraction interactively or in batch. Please see *the SAS/ACCESS Interface To SAP BW: User's Guide, Release 8.2* for more information about extracting metadata using the Wizard to Load

Metadata icon and for information on how to run the extraction in batch. You can also refer to the SAS/ACCESS Interface to SAP BW online help for instructions to use this wizard.

Note 1: You can run an extract using either the RFC Server or the Batch RFC Server. The extraction requests are passed from the SAS client session to the RFC Server or the Batch RFC Server to run the job on the SAP BW system. The RFC Server runs the extraction in a dialog process on the SAP BW system and the Batch RFC Server runs the extraction as a batch job in an R/3 background process. SAP R/3 dialog processes can be subject to time-out limits. This time-out limit may be too short for the extraction to complete and may cause the connection drop. If this happens, your extraction will be incomplete. The batch RFC server avoids this problem and should be used for extraction of metadata and large tables.

Note 2: We recommend that you back up your metadata directory before the metadata extract is run. If your metadata extraction produces an error, you may need to restore the directory.

Note 3: If you are extracting your metadata interactively, you may want to submit the following SAS Options within a program editor in your interactive session to prevent the log from becoming full and requiring interactive responses:

```
Options nosource nonotes;
```

Step 4, Logoff from SAP BW

Close the SAS/ACCESS to SAP BW desktop to logoff. When required, confirm that the connection is to be closed.

Installation is now complete. To ensure it has been successful, refer to Chapter 4 to start the interface, then double-click the BW Explorer icon and browse the content of SAP BW.

Chapter 4 - Start the Interface

To start the SAS/ACCESS Interface to SAP BW from the SAS System, enter on the SAS command line either:

```
%bwaccess
or
afa c=sashelp.accbw.primary.scl
```

Functionality

You must log on to SAP BW to use the SAP BW Explorer window.

Note: SAP BW Explorer reads the metadata from the library specified in Local Setup. If you used a libref different from BWLIB to extract your metadata, your libref needs to be assigned in your current session, and you need to specify the metadata library in the Local Setup. Go into the Local Setup icon, choose the Data Dictionary tab, select your libref from the SAS Library drop down list, and click **OK**. Click on the SAP BW Explorer icon to view your metadata or InfoCube data.

The SAS RFC Server or the SAS Batch RFC Server must be running to extract metadata, to extract InfoCube data, or to use the SAP BW Explorer. If the SAS RFC Server or the SAS Batch RFC server is not running, a return code is generated. For more information, refer to the *SAS/ACCESS Interface to R/3, Release 8.2 Installation Instructions*.

Appendix A - Pre-installation Checklist

Prior to installation of the SAS/ACCESS Interface to SAP BW, all the information in these checklists must be available. Documenting this information (together with the installation table that follows in Appendix B) considerably simplifies installation and ongoing maintenance.

Most of the information is required for the installation of SAS/ACCESS Interface to R/3 and there is no need to fill it separately for the SAS/ACCESS Interface to R/3 installation and the SAS/ACCESS Interface to SAP BW installation. Those sections are marked.

The checklist is broken down into two sections:

- The first should be completed by the person maintaining the SAS environment. It clarifies where SAS/ACCESS Interface to SAP BW is to be installed and where the extracted SAP BW InfoCubes are to reside.

- The second should be completed by the person maintaining the SAP BW environment. It clarifies where SAP AG RFC Software Development Kit resides and which SAP BW systems to be accessed.

SAS Environment

This section should be completed by the person maintaining the SAS environment. It clarifies where SAS/ACCESS Interface to SAP BW is to be installed and where the extracted SAP BW InfoCubes are to reside.

SAS/ACCESS Interface to SAP BW, Application

Data Dictionary Extract(s)

If there are multiple instances of SAP BW then the SAP BW InfoCubes have to be extracted from each system. Complete one of these tables for each metadata extract.

This section replaces the Data Dictionary Extract pre-installation checklist of the SAS/ACCESS Interface to R/3 installation, unless SAS/ACCESS Interface to R/3 will be used on its own to access SAP BW data.

Hostname: IP address: (Typically this is the box that has SAS/ACCESS to SAP BW.)	
Drive/Path where Data Dictionary is to be installed:	
Disk space is available (at least 50MB, depending on the number of InfoCubes and InfoObjects in the SAP BW system)	☐ Yes

Extracted SAP BW InfoCubes on separate machine

The InfoCubes may be extracted to the box that has SAS/ACCESS to SAP BW installed or to a separate machine. Complete this table if you want to extract the InfoCube to a separate machine.

Hostname:	
IP address:	
Operating System/version no:	
OS User ID/Password:	
Windows NT: User ID has administrator rights?	☐ Yes
Windows: Screen-saver password (or disabled):	
UNIX root password:	
Path where The SAS System is installed, i.e. c:\Program Files\SAS Institute\SAS\V8, /usr/local/sas??	
SAS setinit includes SAS/CONNECT, SAS/ACCESS to SAP BW and SAS/ACCESS to R/3 (provided by SAS Institute):	☐ Yes

SAP BW Environment

This section should be completed by the person maintaining the SAP BW environment. It clarifies where SAP AG RFC Software Development Kit resides and which SAP BW systems to be accessed.

General Information

This section should be taken from the SAS/ACCESS Interface to R/3 pre-installation checklist.

Name of SAP BW administrator available to help with install: Phone number: E-mail:	
Name of SAP BW developer available to help with install: Phone number: E-mail:	
Alternately, ABAP/4 developer user ID. Client: User ID: Password: OSS access key (if user ID not previously used for development):	
If ABAP/4 developer user ID not available, normal dialog user. Client: User ID: Password:	

RFC Server

Complete one of these tables for each RFC Server. This section should be taken from the SAS/ACCESS Interface to R/3 pre-installation checklist.

Hostname:	
IP address:	
Location of RFC SDK (i.e., `/usr/sap/TST/exe/run/rfcsdk`)	
Windows NT: Location of librfc32.dll (i.e., `c:\sappc\sapgui\rfcsdk\bin`)	

TCP/IP port no. (default 6991)	
TCP/IP hosts file entry for SAP BW (Application Server) (i.e., 1.2.3.4 bwserver)	
TCP/IP services file entries (i.e., sapdp00 3200/tcp)	

SAP BW

This is information about the SAP BW instance from which SAP BW InfoCubes are to be extracted. SAS/ACCESS to R/3 needs to be installed on each of these systems.
Complete a copy of this table for each SAP BW instance to be accessed. This section should be taken from the SAS/ACCESS Interface to R/3 pre-installation checklist.

Application server hostname:	
IP address:	
R/3 System Release/level (i.e., 3.1h:)	
System ID i.e. A01	
Operating System/version no:	
OS User ID/Password:	
Sideinfo file is used for communication parameters?	☐ Yes ☐ No
If yes, full path and name of sideinfo file:	
RFC User ID – dialog user. Client: User ID: Password:	
CPIC user ID – CPIC enabled. Client: User ID: Password:	
System number (SYS) (i.e., 00)	
Language i.e. E for English	
Gateway host: (if different)	
Gateway service (i.e., sapgw00)	
Transaction program (i.e., sapdp00)	

SAPGUI

SAPGUI is installed on hostname:	
UNIX: has X-Windows?	☐ Yes

Appendix B - Installation Information

During installation, note the following information.

Location of Data Dictionary Extract(s) (e.g., `c:\sas\A01\r3lib`)	
Name of new function group (e.g., ZSAS)	
Transport request number: (e.g., A01K902092)	