HP BSA Essentials

For the Red Hat Enterprise Linux operating system

Software Version: 9.10

Installation Guide

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The title page of this document contains the following identifying information:

*   Software Version number, which indicates the software version.

*   Document Release Date, which changes each time the document is updated.

*   Software Release Date, which indicates the release date of this version of the software.

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1 Welcome to BSA Essentials

Welcome to BSA Essentials 9.10. This product provides both high level and detailed historical reporting on your data center's automation processes for Business Service Automation (BSA) Server and Network Automation products. BSA Essentials gives you insight into your environment through its rich reporting features. These reports provide information about the cost effectiveness and return on investments for the various automated processes in your data center and allow you to see the compliance state of your servers, devices, and business applications.

Installation Types

BSA Essentials 9.10 supports the following installation types (as illustrated in Figure 1):

- **Single Server**: You can install BSA Essentials core services, BusinessObjects reporting, and the database instance on the same server.

- **Dual Server**: You can install the BSA Essentials core services and BusinessObjects reporting on one server, and the BSA Essentials database instance on a different server.

For instructions on how to install BSA Essentials, see Installing BSA Essentials on page 25.

Figure 1   BSA Essentials Installation Types
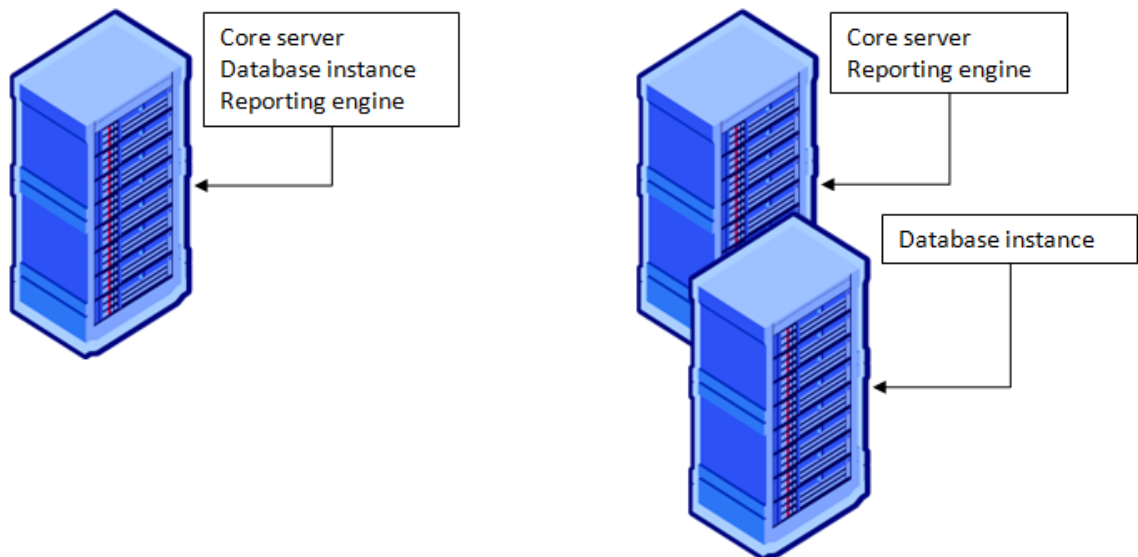
Upgrade Paths

The only supported upgrade path is from BSA Essentials 2.01 to BSA Essentials 9.10.

BSA Essentials can be deployed stand-alone; it is not dependent on Server Automation. You do not need to upgrade SA to upgrade BSA Essentials.

Any out of the box or custom reports written with SAR 7.0, 7.5, 7.8, or BSA Essentials 2.01 will continue to function correctly when users upgrade to BSA Essentials 9.10. Such reports are viewable in the BSA Essentials Java Client.

Supported Platforms

For information regarding supported platforms for BSA Essentials 9.10, see the *BSA Essentials 9.10 Platform Support* document.

Sizing BSA Essentials Deployment Servers

BSA Essentials Architecture and Components

BSA Essentials provide analysis and data warehousing capabilities targeted to the operational needs of IT organizations. There are three major collections of functionality: the BSA Essentials Server, the BSA Essentials Clients, and data miners.

- **BSA Essentials Server** hosts the underlying physical database, core services, BusinessObjects component, and the loader interface.

- **BSA Essentials Web Client** provides a browser-based user interface to access the reporting feature and administrative features, such as creating users and groups and creating Cross Item Groups.

- **Data Miners** collect information from source systems and forward the collected information to the BSA Essentials Server to build the data warehouse.

- **BSA Essentials Java Client** is a legacy client used for viewing BIRT reports and for setting security boundaries for data objects and other certain tasks in reporting from the web client. For more information, see BSA Essentials Clients on page 12.

BSA Essentials Server Components

- **BusinessObjects Enterprise (BOE)**: BusinessObjects Enterprise is a reporting engine and related functionality that is embedded in the BSA Essentials software and installed on the BSA Essentials server. BOE provides very powerful data analytical and reporting capabilities for the data that BSA Essentials mines from the HP data center automation products. BOE is a 3rd party software and its detailed documentation is included as part of the BSA Essentials distribution.

- **BSAE-AAA**: The Authentication, Authorization, and Auditing component provides core AAA services to BSA Essentials, including authentication for user and group accounts, authorization for specific BSA Essentials features, and representation of BSA Essentials data access boundaries.

- **BIRT**: Business Intelligence Reporting Toolkit (BIRT) is the reporting engine that generates formatted report output for legacy reports previous to this release of BSA Essentials. BIRT is an open source component derived from the Eclipse Project.

- **Catalog**: The Catalog application manages the metadata-based data model. The catalog is the source of definitions for items, attributes, and relationships. Extensions to the BSA Essentials data model are managed by the Catalog.

- **Conveyor**: The Conveyor application provides configuration information to a data miner present on a remote data source. The data miner receives updates to the ETL definitions from the Conveyor. These ETL definitions control what information is collected from each source and how that information is mapped to items, attributes, and relationships in the BSA Essentials Database.

- **Cooper**: Cooper is the core web services interface to the BSA Essentials. All BSA Essentials Client data interaction is controlled by Cooper.

- **JAAS Security**: The Java Authentication and Authorization Service (JAAS) Security module marshals authentication, functionality authorization, and security filtering of query information.

- **Loader**: The Loader inserts data records created by data miners into the data warehouse. Because the order of delivery of data from the data miners is not guaranteed, the Loader is responsible for reconstructing the sequence of events as the records are inserted. The Loader also verifies the incoming data records to confirm the data is not corrupted.

- **BSA Essentials JDBC Driver**: The BSA Essentials JDBC Driver implements security filtering by refactoring database queries to limit access to information according to a user's security rights. The BSA Essentials JDBC driver acts in conjunction with a standard JDBC Driver to access the underlying physical representation through the database.

- **BSA Essentials rsync Server**: The BSA Essentials data miner delivers data records to the Loader using the rsync protocol. The rsync Server listens for these connections from the data miner and deposits data records for the Loader to process.

- **Oracle Database Instance**: The BSA Essentials data warehouse uses an Oracle database to store information.

- **Scheduler**: The Scheduler component maintains the queue of scheduled reports and executes those scheduled reports according to their specified schedule.

BSA Essentials Clients

BSA Essentials has two clients. To avoid confusion in this documentation, the client accessed through a browser is referred to as the BSA Essentials Web Client. The client that is a Java application, which is installed on your system, is referred to as the BSA Essentials Java Client.

The BSA Essentials Web Client is the user interface for creating BusinessObjects Web Intelligence documents and reports based upon those documents. The BSA Essentials Web Client is also used for interactively running and scheduling reports, creating users, user groups, and applying permissions for all available reporting operations.

The BSA Essentials Java Client is a self-contained Java application that allows you to access the BSA Essentials Core Server. The Java Client allows you to set security boundary permissions for data items in BSA Essentials, as well as viewing and running BIRT reports.

After you install BSA Essentials and perform user and group permissions setup inside the BSA Essentials Web Client, an administrator can log in to the BSA Essentials Java Client to set security boundaries for the data items you want to report on. Data items include meaningful objects from the various BSA products, such as SA servers, NA network devices, OO flows, and so on. The BSA Essentials Java Client security boundaries allow you to restrict and limit the kinds of information your users can report on.

For more information on how to install and use the BSA Essentials Java Client for setting security boundaries, consult the BSA Essentials online help.

BSA Essentials Data Miners

BSA Essentials data miners collect information for all data sources using the rules specified by the ETL definitions. This source data is formatted into an XML format along with checksum and signature information.

For more information on the data miners, see Installing BSA Essentials Data Miners on page 47.

2 Pre-Installation Requirements

Before You Install BSA Essentials

Before you can install BSA Essentials, you must complete the tasks described in the following sections:

- Pre-Install Task List
- Setting Hostname in /etc/hosts
- Required RPMs for Red Hat Enterprise Linux
- Required Client Libraries for Oracle 11g Release 2
- Open Ports

Pre-Install Task List

You must complete the following tasks on this list before you install BSA Essentials:

- If you are installing in a dual server configuration, make sure that the database server and Core Server are located in one data center or in one local network, or there could be latency issues.

- If you are installing the BSA Essentials database instance, you must install an enterprise version of the Oracle database software from Oracle media since the Oracle RPM is no longer provided with the BSA Essentials product. The Oracle RPM included with Server Automation (SA) is intended for use only with SA and is not a supported option for BSA Essentials.

- If you are installing the BSA Essentials database instance, the Oracle database software must be installed under the Oracle account named "oracle." In addition, for this account, you must set and export the `$ORACLE_HOME` environment variable and include `$ORACLE_HOME/bin` in the `$PATH` variable. The value you set for `$ORACLE_HOME` is the one that will be used during installation since the installer pulls this value from the environment of the Oracle user account. Make sure you set it appropriately.

    > You should not change the value of `$ORACLE_HOME` after installation.

- For single server installation, you must set the `$LD_LIBRARY_PATH` environment variable for the Oracle account named "oracle." This is necessary for the BusinessObjects installation, which must be able to locate the Oracle 32-bit client libraries. An example of the command to set and export this variable is the following:

    ```
    LD_LIBRARY_PATH=/lib:/usr/lib:/u01/app/oracle/product/11.1.0/db_1/
    lib:/u01/app/oracle/product/11.1.0/db_1/lib32; export LD_LIBRARY_PATH
    ```

- In the oracle user home directory, copy the `.bash_profile` file to the `.profile` file.

- You must specify four Oracle data directories when creating the database instance. Otherwise, your database instance creation will fail. Typically, these directories are named /u01/oradata/<*SID*> through /u04/oradata/<*SID*>. As a result of this requirement, you must make sure that you have four unique data directory locations available for installation of the Oracle database instance before starting the BSA Essentials Installer. These directories should *not* be symbolic links. See Directory Sizing on page 21 for more information.

- If you are installing the BSA Essentials Core Server, then the /etc directory must be writeable.

- You must ensure that the BSA Essentials Core Server hostname can be resolved using nslookup. If it cannot, you must correct the DNS configuration so that it can be resolved before starting installation.

- Make sure that your swap space is configured to meet the Linux recommended value of one and half times the installed RAM.

- The BSA Essentials Core Server cannot coexist with SA. Before installing the BSA Essentials Core Server, make sure SA is not installed on the system. However, you can install the BSA Essentials Core Server on a system where the SA agent or SA database is installed.

- SELinux must be disabled on the target installation servers before BSA Essentials is installed, or the BusinessObjects component of the core services will fail to install.

- Configure networking for the server with a fixed IP.

- Configure a fully qualified domain name (FQDN) for the server.

- Set up the server's hostname in the DNS.

- Set the time zone to UTC on the BSA Essentials Core Server since this is a BusinessObjects Reporting requirement.

- Set the time zone to UTC on the machine that hosts the BSA Essentials database instance whether you are using single server or dual server configuration.

- Synchronize the target server's time using NTPD.

- Review Sizing Recommendations on page 17 to determine if the server has at least the recommended minimum disk space. If the server does not have enough disk space, then you will receive a warning during the installation.

Installation of BSA Essentials is not supported on virtual machines.

Setting Hostname in /etc/hosts

The BusinessObjects component of BSA Essentials 9.10 requires that the output from the **hostname** application have an appropriate entry in the /etc/hosts file.

For example, your hosts file might look something like this:

```
# Do not remove the following line, or various programs # that require network
functionality will fail.
127.0.0.1 localhost.localdomain localhost
15.3.106.41 myserver.bsae.mycompany.com myserver
```

In the `/etc/hosts` file, do not use the localhost entry to specify the hostname of your BSA Essentials Core Server. The BSA Essentials Core Server hostname should be a separate entry in the file. It is shown correctly in the example provided above.

Required RPMs for Red Hat Enterprise Linux

For Red Hat Enterprise Linux, you should verify that the following RPMs are present. If they are not present, then you must install them from the Red Hat media. The package control-center can be installed with the `--nodeps` option.

- binutils-2.15.92.0.2-13.0.0.0.2.x86_64
- compat-db-4.1.25-9.i386.rpm
- compat-db-4.1.25-9.x86_64.rpm
- control-center-2.8.0-12.x86_64.rpm
- gcc-3.4.3-22.1.x86_64.rpm
- gcc-c++-3.4.3-22.1.x86_64.rpm
- glibc-2.3.4-2.9.i686.rpm
- glibc-2.3.4-2.9.x86_64.rpm
- glibc-common-2.3.4-2.9.x86_64.rpm
- libstdc++-3.4.3-22.1.x86_64
- libstdc++-devel-3.4.3-22.1.x86_64
- make-3.80-5.x86_64.rpm
- sysstat-5.0.5-1.x86_64.rpm
- compat-libstdc++-33-3.2.3-47.3.x86_64.rpm
- compat-libstdc++-33-3.2.3-47.3.i386.rpm
- glibc-headers-2.3.4-2.9.x86_64.rpm
- libaio-0.3.103-3.i386.rpm
- libaio-0.3.103-3.x86_64.rpm
- libgcc-3.4.3-22.1.i386.rpm
- glibc-devel-2.3.4-2.9.x86_64.rpm
- glibc-devel-2.3.4-2.9.i386.rpm

Required Client Libraries for Oracle 11g Release 2

If you plan to use the Oracle 11g Release 2 database as your database server in a single server installation, you must install the 32-bit Oracle client on your system in the correct location.

Before installing the Oracle client libraries, the Oracle database software must already be installed on your system.

The following procedure represents one way that you can accomplish this task.

To install the client software, perform the following steps on your BSA Essentials Core Server:

1 Download the Oracle client libraries for Linux x86 from http://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html. Specifically, you want Linux x86 (See All) Oracle Database 11g Release 2 Client (11.2.0.1.0) for Linux x86 > linux_11gR2_client.zip (642,016,988 bytes) (cksum - 1997033971).

2 As the Oracle user, unzip the downloaded file and install the client libraries by running the provided `runInstaller`. You must not over-write an existing installation so specify an alternative directory to install the client files, for example, `/opt/Oracle32`. When you create the alternative directory, ensure that it has write permission.

> The installer runs in graphical mode only.

3 Create the location for the client libraries on your server by executing the following command:

`mkdir $ORACLE_HOME/lib32`

4 Copy the client libraries to the location you created in the previous step by executing the following command:

`cp /opt/Oracle32/lib* $ORACLE_HOME/lib32`

5 Change directory to this location by executing the following command:

`cd $ORACLE_HOME/lib32`

6 Link the libraries by executing the following commands:

— `ln -s libclntsh.so.11.1 libclntsh.so`

— `ln -s libocci.so.11.1 libocci.so`

Open Ports

You should be aware of the ports that are in use before installing BSA Essentials. The following table lists the ports required for BSA Essentials and their default numbers. If you open different ports, you can configure the port numbers during installation.

Table 1   BSA Essentials Ports

Port Number	Type	Purpose
8443 (TCP)	Web services	Data miner on a managed server
8443 (TCP)	Web services	BSA Essentials Client and Web Client
8080 (TCP)	Web services	Advanced configuration and administration
8873 (TCP)	RSYNC	Data miner on a managed server
14445 (TCP)	RMI over SSL	BSA Essentials Client

> It is recommended that you block port 1099 from external access to the BSA Essentials Core Server, in order to secure your core's JMX console services.

In addition, the BSA Essentials core requires ports 6400 and 6410 to be available internally for BusinessObjects.

3 Sizing Recommendations

This guide suggests deployment sizing guidelines to help you decide the kind of hardware and infrastructure you will need to deploy BSA Essentials in your environment.

This guide contains the follow sections:

- BSA Essentials Installation Components
- Deployment Sizing Categories — Small, Medium, Large
- Recommended Sizing for BSA Essentials Components
- Sizing Single and Dual Server Deployments

BSA Essentials Installation Components

This guide suggests the minimum recommended CPU count, RAM, and disk space for the three BSA Essentials installation components:

- BSA Essentials core services
- BSA Essentials database instance
- BSA Essentials data miner

BSA Essentials Core Services

The core services are a set of processes responsible for the following operations:

- Loading of data into the BSA Essentials database that has been delivered by the BSA Essentials data miner component.
- Displaying the BSA Essentials Web Client user interface, receiving user requests, report scheduling, report execution, and display of report results to users.

The processes that constitute the BSA Essentials core services component include an embedded version of BusinessObjects.

The BSA Essentials core services components reside on a separate physical system from that hosting the source applications, namely Server Automation (SA), Network Automation (NA), or Operations Orchestration (OO).

The location of the BSA Essentials core services depends on the selected deployment model:

- Single-server deployment: BSA Essentials core services components reside on the same physical host as the BSA Essentials database.
- Dual-server deployment: BSA Essentials core services components reside on a separate physical server from that hosting the BSA Essentials database.

BSA Essentials Database Instance

An Oracle database instance which hosts transformed source application data used for reporting purposes.

The location of the BSA Essentials database instance depends on the selected BSA Essentials deployment model:

- Single-server deployment: BSA Essentials database instance resides on the same physical host as the BSA Essentials core services components.

- Dual-server deployment: BSA Essentials database instance resides on a separate physical host from the BSA Essentials core services components.

In the dual-server deployment model, the BSA Essentials database instance can co-exist with the SA or NA database instances.

BSA Essentials Data miner

The data miner is a process that is responsible for extraction of data from the source application and subsequent delivery to the system which hosts the BSA Essentials core services component.

Possible source applications for BSA Essentials include SA, NA, and OO.

Deployment Sizing Categories — Small, Medium, Large

The following table defines BSA Essentials deployments as small, medium, or large.

Table 2   BSA Essentials 9.10 Deployment Sizing Categories

	Server Automation (SA) Managed Servers/ Devices	Network Automation (NA) Managed Devices
Small	< 1,000	< 3,000
Medium	< 5,000	< 10,000
Large	10,000 - 25,000	Not supported

▶ The number of managed servers/devices is not an exact measure for sizing. NA and SA sizing depends greatly on what you do with the operational system. For example, if you are running daily large snapshots on all your servers and devices, the amount of data reported to BSA Essentials will correspondingly be increased. To get more accurate information for your environment, you should contact your HP representative.

Sizing Units

- **CPU**: A processor core, 2.66 GHz and greater
- **RAM**: GB
- **Disk**: GB

Recommended Sizing for BSA Essentials Components

The following table describes sizing suggestions for deploying the BSA Essentials core services components.

Table 3   Recommended Sizing — BSA Essentials Core Services

	CPU	RAM	Disk Space
Small	4	8 GB	158 GB
Medium	4	16 GB	158 GB
Large	8	16 GB	158 GB

The following table describes sizing suggestions for deploying the BSA Essentials database component.

Table 4   Recommended Sizing — BSA Essentials Database

	CPU	RAM	Disk Space
Small	4	4 GB	See Database Sizing Estimate — SA and NA.
Medium	4	8 GB	See Database Sizing Estimate — SA and NA.
Large	4	16 GB	See Database Sizing Estimate — SA and NA.

The following table describes sizing suggestions for deploying the BSA Essentials data miner.

Table 5   Recommended Sizing — BSA Essentials Data Miner

	CPU	RAM	Disk Space
Small	1	2 GB	5 GB
Medium	2	4 GB	10 GB
Large	2	4 GB	20 GB

Sizing Single and Dual Server Deployments

BSA Essentials 9.10 supports the following deployment options:

- **Single Server**: Install all components on a single server.
- **Dual Server**: Install the core services component on one server, and create the BSA Essentials database instance on a separate server (including collocating the database component on another BSA product's database servers).

When considering sizing for these types of deployments, each sizing suggestion should be considered independent of whether or not the components are installed on the same server or on different servers. In other words, these sizing suggestions should be considered additive.

For example, if you wanted to install the BSA Essentials core and create the database instance on the same server, then you should add the values of the two tables above to base your sizing requirements.

Thus, a *small* single server deployment would require the following deployment suggestion:

- 8 processor core (2 quad processors)

- 12 GB RAM

- 183 GB disk space (158 GB from BSA Essentials core services component + 25 GB from the BSA Essentials Database table = 183)

▶ For a large deployment, you will likely need to add more data files to your database, since the BSA Essentials database instance has only a maximum of 100 GB defined for storing data mined over from different data sources.

Database Sizing Estimate — SA and NA

These sizing estimates are for Server Automation (SA) and Network Automation (NA) managed devices.

The database sizing rule for estimating required disk space is based on the following criteria:

- number of managed devices (measured in thousands)

- number of years to keep records about those managed devices

For every thousand devices, you should allow 10 GB of disk space for the first year, plus an additional 5 GB for each year after the first year.

Table 6   Example Database Disk Sizing Calculations

Devices	Total Years	First Year Space Requirement	Additional Years After First Year Space Requirement	Total Disk Space
1,000	1	10 GB	0 x 15 = 0 GB	10 GB
5,000	5	50 GB	4 x 55 = 220 GB	270 GB
10,000	4	100 GB	3 x 105 = 315 GB	415 GB

> These sizing estimates are based on the assumption that there are no network bottlenecks in your BSA Essentials deployment. To ensure that is the case, it is recommended that you set up at least a 1 Gbps NIC on the BSA Essentials server.

It is recommended that /u02 on a BSA Essentials Database server be a multi-disk storage array. You can use a variety of storage solutions, including internal storage, Network Attached Storage (NAS), and Storage Area Networks (SANs).

The BSA Essentials database instance disk sizing value includes 5 GB to allow for the Oracle database installation requirements. For large environments, see the Oracle documentation for recommendations on disk sizing for Oracle log size growth and other issues as relevant to your production environment, and add to that 5 GB appropriately.

In general, the database disk sizing calculations provided in Table 6 above is for estimating purposes only. The actual sizing requirements can vary based upon the type and amount of data being stored.

Directory Sizing

The following table suggests core server and database server directory sizing for BSA Essentials deployment.

Table 7   BSA Essentials Directory Sizing

BSA Essentials Directory	Size	Usage
/etc/opt/opsware	10 MB	Configuration information for BSA Essentials services
/opt/opsware	32 GB	Base directory for BSA Essentials
/opt/HP/BSAE	500 MB	Contains some installation logs and the uninstaller
/var/opt/opsware	25 GB	Contains staging directories for LNc (deployer)
/var/log/opsware	100 GB	Contains several server logs.
/var/log/HP/BSAE	500 MB	Contains installation logs
/u01, /u02, /u03, /u04	See Database Sizing Estimate — SA and NA.	Oracle application and data files The following database files are placed into the data directories: • /u01/oradata/*<SID>*: 1 control file • /u02/oradata/*<SID>*: All data files • /u03/oradata/*<SID>*: 1 control file and 3 redo log files • /u04/oradata/*<SID>*: 1 control file and 3 redo log files
Total	**158 GB plus database size estimate**	

The values in Table 7 above represent minimum values. Actual sizes for these directories will be determined by what you actually do on the operational system.

Tablespace Usage and Sizing

Table 8   BSA Essentials Database Tablespace Usage

BSA Essentials Database Tablespace Name	Usage	Small, Medium, or Large
BO_ADMIN	Used to store BO data. This tablespace should not grow too fast with normal usage. This table space size is directly related to the number of users in the BSA Essentials deployment, not the number of devices the BSA Essentials deployment is set up to report on. A large number of users that may store a large number of reports will drive up the size for this table space.	Initial size 30 MB. Maximum 20 GB.
CMDB_AAA	Used to store BSA Essentials users info. The size for this tablespace can be fairly small. It is not affected by number of devices or the number of users.	Initial size 25MB. Maximum size 10 GB.
CMDB_CUSTOM	Used to store custom ETLs or customer-added features. In most situations this is rarely used and thus does not require a large amount of space.	Initial size 1 MB. Maximum size 25 GB
CMDB_TEMP	Provides temporary space for all DML and query operations performed by CMDB components and users. This is the default temporary tablespace for CMDB-related users.	Initial size 100 MB. Maximum size 25 GB.
SYSAUX	System tablespace used by Oracle.	Initial size 50 MB. Maximum size 1 GB
SYSTEM	System tablespace used by Oracle.	Initial size 250 MB. Maximum size 2 GB.
TEMP	Temporary tablespace for the system user.	Initial 100 MB. Maximum size 5 GB

Table 8   BSA Essentials Database Tablespace Usage

BSA Essentials Database Tablespace Name	Usage	Small, Medium, or Large
UNDO	Used for undo and rollback operations.	Initial size 200 MB. Maximum size 5 GB.
USER	Storage area for database users or database tools.	Initial size 10 MB. Maximum size 500 MB.
ASAS_RPT_DATA	Staging areas for storing ASAS (Storage Visibility and Automation) data if there is an ASAS data miner configured. Otherwise it is not used. Data inside can be removed daily after the ETL is run.	Initial size 50 MB. Maximum size 32 GB.
CMDB_DATA	Storage area for all data that is mined from other products. Most of the space for the BSA Essentials database is consumed under this table space. Refer to Table 6 for the variables and sizing guidance relevant to this table space. Database purging frequency also determines the size consumed under this table space.	Initial size 200 MB. Maximum size 100 GB (across 4 data files).
CMDB_META	Store the metadata about the data tables and CI types.	Initial size 30 MB. Maximum size 10 GB.

4 Installing BSA Essentials

Overview

This chapter explains how to install BSA Essentials 9.10 for the following installation sets:

- Single Server Installation: Install BSA Essentials Core Server and create the Oracle database instance on the same server. This installation type is only available if you have Oracle installed on the server.

- Dual Server Installation—BSA Essentials Database Instance: Create only the Oracle database instance for BSA Essentials. This option is only available if you have Oracle installed on the server.

- Dual Server Installation—BSA Essentials Core Server: Install only the BSA Essentials Core Server.

BSA Essentials can be installed from either a console or an X Window System GUI. The installation is basically the same in console mode as it is in GUI mode.

The installation modes are discussed in the following sections:

- Installing from the Command Line on page 26
- Installing from the Graphical User Interface on page 27

▶ Be aware that the installation of BSA Essentials core services and the BusinessObjects reporting engine, database creation, and the core configuration are very time-consuming steps in the installation procedure.

▶ If you plan to upgrade your Oracle database software after installing BSA Essentials on a single-server installation, you must maintain the same value for $ORACLE\_HOME$ even though the Oracle upgrade procedure indicates that you should change this value. If you change this value, BSA Essentials will not function correctly.

▶ Be aware that during the database instance installation process (in all of the modes and configurations options described in the following sections), you will be prompted for a single password that will be applied to all of the oracle database users. It is possible to change the passwords after installation. See Changing BSA Essentials Passwords on page 46.

Assembling the ISOs

The electronic distribution of BSA Essentials 9.10 comes on three 2 gigabyte ISOs. When using the electronic distribution, you must unpack all three ISOs and reassemble them into a single distribution before you can install the product. The contents of the ISOs just need to be copied to a single folder with at least 5 gigabytes of storage before installation can begin.

In order to rebuild the electronic distribution, perform the following steps as root:

1 `mkdir disk1`

2 `mkdir disk2`

3 `mkdir disk3`

4 `mount -o loop T9238-15000-01.iso disk1`

5 `mount -o loop T9238-15000-02.iso disk2`

6 `mount -o loop T9238-15000-03.iso disk3`

7 `ls disk1`

8 `ls disk2`

9 `ls disk3`

10 `mkdir image`

11 `cp disk1/* image`

12 `cp disk2/* image`

13 `cp disk3/* image`

14 `cd image`

15 `./install.bin`

16 `umount disk1`

17 `umount disk2`

18 `umount disk3`

Installing from the Command Line

If you are installing from a console, then the installer will automatically start in console mode.

To force the installer to start in console mode:

1 Mount the BSA Essentials installation media.

2 Type the following command in a console:

   `/<mnt_point>/install.bin -i console`

Installing from the Graphical User Interface

The installer will automatically start in a GUI window if you are using a graphical interface. To force the installer to start in GUI mode:

1 Mount the BSA Essentials installation media.

2 Type the following command in a console window:

    /<mnt_point>/install.bin -i GUI

Single Server Installation

You can install the BSA Essentials Core Server and create the database instance on a server where you have Oracle installed. The BSA Essentials installation creates the database instance but does not install Oracle. Oracle must already be installed on the server.

To install the BSA Essentials Core Server and database instance on a single server, complete the following steps:

Installing with the Installation Wizard

1 Log on as root to the server where you want to install BSA Essentials.

2 Mount the BSA Essentials installation media.

3 Start the BSA Essentials installer using the following command:

    /<mnt_point>/install.bin

4 Click **Next** to begin the installation.

5 Accept the license agreement.

6 Select **Single Server Installation (All Features)** for the installation type and click **Next**.

7 Enter the database connection information described below and click **Next**.

   • **Database Server Name**: Localhost or a resolvable name of the current server. You must already have Oracle installed on this server.

   • **Database Port**: The port number for the database instance.

   • **Database SID**: The System ID (SID) for the database instance.

   • **Database Service Name**: The name of the Oracle database service.

8 Enter the password that you want created for the database administrator, enter the same password in the Confirm Password box, and then click **Next**.

9 Enter the database instance information described below and click **Next**.

   • **Oracle Home Directory**: This field is pre-populated with the value you set for the $ORACLE_HOME environment variable. See Before You Install BSA Essentials **on page 13**. If you want to use another value, you must exit the installation and reset this variable in the Oracle user environment.

- **Oracle Admin Directory**: The location of the Oracle admin directory. This directory is usually named `/u01/app/oracle/admin/<SID>` where `<SID>` is the SID you provided.

- **Oracle Data Directory 1**: The location where you want to create the first directory for Oracle data for the database instance. This directory is usually named `/u01/oradata/<SID>` where `<SID>` is the SID you provided.

- **Oracle Data Directory 2**: The location where you want to create the second directory for Oracle data for the database instance. This directory is usually named `/u02/oradata/<SID>` where `<SID>` is the SID you provided.

- **Oracle Data Directory 3**: The location where you want to create the third directory for Oracle data for the database instance. This directory is usually named `/u03/oradata/<SID>` where `<SID>` is the SID you provided.

- **Oracle Data Directory 4**: The location where you want to create the fourth directory for Oracle data for the database instance. This directory is usually named `/u04/oradata/<SID>` where `<SID>` is the SID you provided.

If an Oracle listener configuration file is found at the file location `ORACLE_HOME/network/admin/listener.ora`, then you will be prompted to choose between overwriting the configuration file or manually configuring the listener. A template is provided for manual configuration in `ORACLE_HOME/network/admin/bsae.listener.ora`. See the Oracle documentation for configuration instructions. You must have a listener configured before you can proceed with the installation.

10 Enter the host name and port numbers for BSA Essentials described below and click **Next**.

- **Core Hostname**: The fully qualified domain name of the server.

- **HTTPS Port**: The port where the BSA Essentials Web Client will connect.

- **Rsync Port**: The port number that will be used by the data miner for data transfer.

- **RMI Port**: The port used by the BSA Essentials Java Client.

11 Enter the email server and port, which are used to email reports, and click **Next**.

- **SMTP Server**: The fully qualified domain name of your email server.

- **SMTP Port**: The port number used by your email server.

12 Enter the password you wish to use for the BSA Essentials administrator, enter the password again in the Confirm Password box, and then click **Next**.

13 Enter the crypto keystore passphrase, enter the same passphrase in the Confirm Passphrase box, and then click **Next**.

> The keystore passphrase must be at least 6 characters in length.

This passphrase is used to generate a certificate that will be used by the core platform for secure transactions. If you want to use an existing certificate, you should contact your HP representative for more information.

14 Select **Enable user import** if you want to create and update user and group information from data collected by the data miner from Server Automation, and then click **Next**.

> If you have selected this option, you must still install the data miner and complete the steps in the *Importing Users From Server Automation* section of the *BSA Essentials Administrator Guide* for user import to work. However, there is no need to follow the procedure described in the *Importing Users From Server Automation > Setting the 'User Importing Enabled' Property* section of the *BSA Essentials Administrator Guide*.

15 Enter the **Reporting Administration HTTP Port**, which is the port used by the BusinessObjects administration client, and click **Next**.

See *Central Management Console (CMC) Admin Tasks* in the *BSA Essentials Administrator Guide* for information about using the BusinessObjects administration client to perform tasks for BSA Essentials.

16 Review the Installation Summary and click **Install** to complete the installation.

If you cancel the installation or if the installation fails, then all BSA Essentials files and directories that have been installed will be removed unless you have another BSA product installed on this server. If you have another BSA product installed, then any files that are required for that product will not be removed. You will need to remove any database components that have been created. See Removing the BSA Essentials Database Instance on page 84.

The following installation log files are placed into the `/var/log/HP/BSAE` directory:

- `install.log`
- `install_stdout.log`
- `install_stderr.log`
- `dbinstall.log`

The BSA Essentials installer places the uninstaller program and documentation in `/opt/HP/BSAE`.

Installing from the Command Line

To use the installation program (`install.bin`) to install BSA Essentials, follow these steps:

1 Log on as root to the server where you want to install BSA Essentials.

2 Mount the DVD.

3 Go to the media root (`cd /<mnt_point>/`).

4 Run the following command:

`./install.bin -i console`

The `install.bin` program starts an interactive session to install BSA Essentials and the following prompt appears:

`PRESS <ENTER> TO CONTINUE:`

5 Press **ENTER**. The license agreement for BSA Essentials appears.

6 Press **ENTER** to scroll through the license agreement, and then press **Y** to accept the license agreement. The following prompt appears:

`Choose Install Set`

```
------------------
Please choose the Install Set to be installed by this installer.
1- Single Server Installation (All Features)
2- Dual Server Installation (Database Server)
3- Dual Server Installation (Core Server)
ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT
```

7   Type **1**, and then press **ENTER**. The following prompt appears:

```
Warning (Collect Diskspace)
---------------------------
Check Sizing Guide for recommended disk space for data collect directory.
Free Disk Space Available:   <number_of_bytes> bytes
```

If the available disk space matches (or exceeds) the requirement, press **ENTER**. The following prompt appears:

```
Database Connection
---------------------------
Enter requested information needed for setup of Database Connections to
Database Instance
Database Server Name (DEFAULT: localhost):
```

8   Type the fully qualified domain name of the server (or type **localhost**), and then press **ENTER**. The following prompt appears:

```
Database Port (Default: 1521):
```

9   Type the port used by Oracle, and then press **ENTER**. The following prompt appears:

```
Database SID (Default: bsadb):
```

10 Type the database SID of your choice for the instance that you are going to create, and then press **ENTER**. The following prompt appears:

```
Database Service Name(Default: bsadb.world):
```

11 Type the database service name of your choice, and then press **ENTER**. The following prompt appears:

```
Enter Database Password
---------------------------------
This installation requires a password for the Database CMDB_ADMIN User.
Please Enter the Password:
```

12 Type a password for the user, and then press **ENTER**. The following prompt appears:

```
Confirm Password:
```

13 Type the password again, and then press **ENTER**. The following prompt appears:

```
Database Instance
---------------
Enter requested information needed to setup Database Instance
ORACLE_HOME for the Oracle user currently set to /u01/app/oracle/product/
11.1.0/db_1
Oracle Admin Directory (DEFAULT: /u01/app/oracle/admin/bsadb)
```

14 Type the complete path to the Oracle Admin directory, and then press **ENTER**. The following prompt appears:

```
Oracle Data Directory 1 (DEFAULT: /u01/oradata/bsadb):
```

15 Type the complete path to the location where you want to create the first directory for the Oracle data for the database instance, and then press **ENTER**. The following prompt appears:

```
Oracle Data Directory 2 (DEFAULT: /u02/oradata/bsadb):
```

16 Type the complete path to the location where you want to create the second directory for the Oracle data for the database instance, and then press **ENTER**. The following prompt appears:

```
Oracle Data Directory 3 (DEFAULT: /u03/oradata/bsadb):
```

17 Type the complete path to the location where you want to create the third directory for the Oracle data for the database instance, and then press **ENTER**. The following prompt appears:

```
Oracle Data Directory 4 (DEFAULT: /u04/oradata/bsadb):
```

18 Type the complete path to the location where you want to create the fourth directory for the Oracle data for the database instance, and then press **ENTER**. The following prompt appears:

```
Database Network Configuration
------------------------------
Oracle network configuration already exists at
/u01/app/oracle/product/11.1.0/db_1/network/admin/tnsnames.ora
Select 'Overwrite' to overwrite the existing tnsnames.ora file.  Old
settings will be saved.
Select 'Manual Configuration' to manually configure the tnsnames.ora file.
->1- Overwrite
2- Manual Configuration
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT: 1
```

19 Type **1**, and then press **ENTER**. The following prompt appears:

```
Database Network Configuration Confirmation
-------------------------------------------
You have chosen to overwrite the existing Oracle network configuration at
/u01/app/oracle/product/11.1.0/db_1/network/admin/tnsnames.ora

The existing tnsnames.ora will be backed up to /u01/app/oracle/product/
11.1.0/db_1/network/admin/tnsnames.ora.bak

->1- Ok
2- Back
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

20 Type **1**, and then press **ENTER**. The following prompt appears:

```
Database Listener Configuration
-------------------------------
Oracle listener configuration already exists at
/u01/app/oracle/product/11.1.0/db_1/network/admin/listener.ora
Select 'Overwrite' to overwrite the listener configuration.  Old settings
will be saved.
Select 'Manual Configuration' to manually configure the listener
configuration.
->1- Overwrite
2- Manual Configuration
```

```
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT: 1
```

21 Type **1**, and then press **ENTER**. The following prompt appears:

```
Database Listener Configuration Confirmation
--------------------------------------------
You have chosen to overwrite the existing Oracle Listener configuration at
/u01/app/oracle/product/11.1.0/db_1/network/admin/listener.ora
The existing listener.ora will be backed up to /u01/app/oracle/product/
11.1.0/db_1/network/admin/listener.ora.bak
->1- Ok
2- Back
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

22 Type **1**, and then press **ENTER**. The following prompt appears:

```
Core Platform
--------------
Enter a Fully Qualified Domain Name that is externally resolvable for this
server and enter the TCP ports that are externally accessible and available
on this server.
Core Hostname (DEFAULT: <hostname.domain.com>):
```

23 Type the fully qualified domain name of the server, and then press **ENTER**. The following
    prompt appears:

```
HTTPS Port (DEFAULT: 8443):
```

24 Type the HTTPS port for the server (the port where the BSA Essentials Web Client will
    connect), and then press **ENTER**. The following prompt appears:

```
RSync Port (DEFAULT: 8873):
```

25 Type the RSync port for the server (the port number that will be used by the data miner
    for data transfer), and then press **ENTER**. The following prompt appears:

```
RMI Port (DEFAULT: 14445):
```

26 Type the RMI port for BSA Essentials (the port used by the BSA Essentials Java Client),
    and then press **ENTER**. The following prompt appears:

```
Core Platform Mail Configuration
---------------------------------
Enter mail SMTP name and port information
SMTP Server (DEFAULT: localhost):
```

27 Type the fully qualified domain name of the SMTP server that you want to use with BSA
    Essentials for emailing reports, and then press **ENTER**. The following prompt appears:

```
SMTP Port (DEFAULT: 25):
```

28 Type the port used by the above server, and then press **ENTER**. The following prompt
    appears:

```
Enter Admin Password
---------------------
This installation requires a password for the BSA Essentials Admin User.
Please Enter the Password:
```

29 Type the password you want to use for the BSA Essentials administrator, and then press
    ENTER. The following prompt appears:

```
Confirm Password:
```

30 Type the same password again, and then press **ENTER**. The following prompt appears:

```
Enter Crypto Keystore Passphrase
--------------------------------
This installation requires a passphrase for the BSA Essentials Crypto
Keystore.
Please Enter the Passphrase:
```

31 Type the passphrase you want to use, and then press **ENTER**. The following prompt appears:

```
Confirm Passphrase:
```

32 Type the same passphrase again, and then press **ENTER**. The following prompt appears:

```
User Import from Datasource
---------------------------
Select to enable user import feature.
->1- User Import Enabled
2- User Import Disabled
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

33 Do one of the following:

- Type **1** to enable user import

- Type **2** to disable user import

    ▶ If you have selected this option, you must still install the data miner and complete
    the steps in the *Importing Users From Server Automation* section of the *BSA
    Essentials Administrator Guide* for user import to work. However, there is no need
    to follow the procedure described in the *Importing Users From Server Automation
    > Setting the 'User Importing Enabled' Property* section of the *BSA Essentials
    Administrator Guide*.

34 Press **ENTER**. The following prompt appears:

```
Reporting Server
----------------
Enter the Reporting Server Configuration Port for BusinessObjects
Reporting Feature.
Reporting Administration HTTP Port (DEFAULT: 8080):
```

35 Type the port that will be used by the BusinessObjects administration client, and then
    press **ENTER**. The following prompt appears:

```
Pre-Installation Summary
------------------------------
Please review the following before continuing
Product Name:
    BSA Essentials

Install Folder:
    /opt/HP/BSAE

Install Set:
    Single Server Installation (All Features)

Product Feature:
```

```
     User and Administration Manuals,
  Database Instance,
  HP Lightweight Single-SignOn,
  Core Platform,
  Core Administration Console,
  Reporting Universe,
  BusinessObjects Administration,
  BusinessObjects Reporting

PRESS <ENTER> TO CONTINUE:
```

36 Press **ENTER**. The `install.bin` program starts installing BSA Essentials.

After installation, the following message appears:

```
Installation Complete
---------------------
Congratulations. BSA Essentials has been successfully installed.
View install logs at:  /var/log/HP/BSAE
```

37 Press **ENTER** to exit the installer.

The following installation log files are placed into the `/var/log/HP/BSAE` directory:

- `install.log`

- `install_stdout.log`

- `install_stderr.log`

- `dbinstall.log`

The BSA Essentials installer places the uninstaller program and documentation in `/opt/HP/BSAE`.

Dual Server Installation—BSA Essentials Database Instance

You can create the BSA Essentials database instance on a server where you have Oracle installed. The BSA Essentials installation creates the database instance but does not install Oracle. Oracle must already be installed on the server.

If you want to create the database instance for BSA Essentials manually, use the SQL scripts included in the `db_utils.tar` file. The `db_utils.tar` file is available at the root location of the BSA Essentials media. To use the SQL scripts, follow the instructions in the *Creating BSA Essentials Oracle Database Instance with SQL Scripts* document (`BSA_Essentials_DB_Instance_Creation.pdf`), which is included in the `db_utils.tar` file.

Creating the Database Instance from the Command Line

From the command line, you can create the BSA Essentials database instance in one of the following ways:

- **Using the installer program:** You can use the `install.bin` program to create the database instance.

- **Using the interactive script:** The BSA Essentials 9.10 media provides you with an interactive script (`createDatabase_interactive.sh`) to create the BSA Essentials database instance. To use this script instead of the `install.bin` program, see Create the BSA Essentials Database Instance with the Interactive Script on page 38.

Create the BSA Essentials Database Instance with the Installer Program

To use the installation program (`install.bin`) to create the Oracle database instance, follow these steps:

1   Log on as root to the system where Oracle is installed.

2   Mount the DVD.

3   Go to the media root (`cd /<mnt_point>/`).

4   Run the following command:

./install.bin -i console

The `install.bin` program starts an interactive session to create the new Oracle instance and the following prompt appears:

```
PRESS <ENTER> TO CONTINUE:
```

5   Press **ENTER**. The license agreement for BSA Essentials appears.

6   Press **ENTER** to scroll through the license agreement, and then press **Y** to accept the license agreement. The following prompt appears:

```
Choose Install Set
------------------
Please choose the Install Set to be installed by this installer.
1- Single Server Installation (All Features)
2- Dual Server Installation (Database Server)
3- Dual Server Installation (Core Server)
ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT
```

7   Type **2**, and then press **ENTER**. The following prompt appears:

```
Database Connection
-------------------
Enter requested information needed for setup of Database Connections to
Database Instance
Database Server Name (DEFAULT: localhost):
```

8   Type the hostname of the system where the Oracle database is installed, and then press **ENTER**. The following prompt appears:

```
Database Port (Default: 1521):
```

9   Type the port used by Oracle, and then press **ENTER**. The following prompt appears:

```
Database SID (Default: bsadb):
```

10   Type the database SID of your choice for the instance that you are going to create, and then press **ENTER**. The following prompt appears:

```
Database Service Name(Default: bsadb.world):
```

11   Type the database service name of your choice, and then press **ENTER**. The following prompt appears:

```
Database Admin User Password
```

```
    --------------------------
    This installation requires a password to continue. Enter a password to use
    for the CMDB_ADMIN database user account.
    Please Enter the Password:
```

12 Type a password for the user, and then press **ENTER**. The following prompt appears:

```
    Confirm Password:
```

13 Type the password again, and then press **ENTER**. The following prompt appears:

```
    Database Instance
    ---------------
    Enter requested information needed to setup Database Instance
    ORACLE_HOME for the Oracle user currently set to /u01/app/oracle/product/
    11.1.0/db_1
    Oracle Admin Directory (DEFAULT: /u01/app/oracle/admin/bsadb)
```

14 Type the complete path to the Oracle Admin directory, and then press **ENTER**. The
    following prompt appears:

```
    Oracle Data Directory 1 (DEFAULT: /u01/oradata/bsadb):
```

15 Type the complete path to the location where you want to create the first directory for the
    Oracle data for the database instance, and then press **ENTER**. The following prompt
    appears:

```
    Oracle Data Directory 2 (DEFAULT: /u02/oradata/bsadb):
```

16 Type the complete path to the location where you want to create the second directory for
    the Oracle data for the database instance, and then press **ENTER**. The following prompt
    appears:

```
    Oracle Data Directory 3 (DEFAULT: /u03/oradata/bsadb):
```

17 Type the complete path to the location where you want to create the third directory for the
    Oracle data for the database instance, and then press **ENTER**. The following prompt
    appears:

```
    Oracle Data Directory 4 (DEFAULT: /u04/oradata/bsadb):
```

18 Type the complete path to the location where you want to create the fourth directory for
    the Oracle data for the database instance, and then press **ENTER**. The following prompt
    appears:

```
    Database Network Configuration
    ------------------------------
    Oracle network configuration already exists at
    /u01/app/oracle/product/11.1.0/db_1/network/admin/tnsnames.ora
    Select 'Overwrite' to overwrite the existing tnsnames.ora file.  Old
    settings will be saved.
    Select 'Manual Configuration' to manually configure the tnsnames.ora file.
    1- Overwrite
    2- Manual Configuration
    ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
    DEFAULT: 1
```

19 Type **1**, and then press **ENTER**. The following prompt appears:

```
    Database Network Configuration Confirmation
    -------------------------------------------
    You have chosen to overwrite the existing Oracle network configuration at
    /u01/app/oracle/product/11.1.0/db_1/network/admin/tnsnames.ora
```

```
The existing tnsnames.ora will be backed up to /u01/app/oracle/product/
11.1.0/db_1/network/admin/tnsnames.ora.bak

1- Ok
2- Back
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

20 Type **1**, and then press **ENTER**. The following prompt appears:

```
Database Listener Configuration
-------------------------------
Oracle listener configuration already exists at
/u01/app/oracle/product/11.1.0/db_1/network/admin/listener.ora
Select 'Overwrite' to overwrite the listener configuration.  Old settings
will be saved.
Select 'Manual Configuration' to manually configure the listener
configuration.
1- Overwrite
2- Manual Configuration
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT: 1
```

21 Type **1**, and then press **ENTER**. The following prompt appears:

```
Database Listener Configuration Confirmation
--------------------------------------------
You have chosen to overwrite the existing Oracle Listener configuration at
/u01/app/oracle/product/11.1.0/db_1/network/admin/listener.ora

The existing listener.ora will be backed up to /u01/app/oracle/product/
11.1.0/db_1/network/admin/listener.ora.bak

1- Ok
2- Back
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

22 Type **1**, and then press **ENTER**. The following prompt appears:

```
Pre-Installation Summary
-------------------------------
Please review the following before continuing
Product Name:
    BSA Essentials

Install Folder:
    /opt/HP/BSAE

Install Set:
    Dual Server Installation (Database Server)

Product Feature:
    Database Instance
```

23 Press **ENTER**. The install.bin program starts creating the database instance.

After completion of the database instance creation, the following message appears:

```
Installation Complete
--------------------
Congratulations. BSA Essentials has been successfully installed.
View install logs at:  /var/log/HP/BSAE
```

24 Press **ENTER** to exit the installer.

The following installation log files are placed into the `/var/log/HP/BSAE` directory:

- `install.log`
- `install_stdout.log`
- `install_stderr.log`
- `dbinstall.log`

Create the BSA Essentials Database Instance with the Interactive Script

The database instance creation is accomplished by the BSA Essentials installer program. However, if you want a greater control over the creation of the database instance, you can use the interactive script instead of the installer program.

To create the BSA Essentials database instance with the interactive script (`createDatabase_interactive.sh`), which is available on the BSA Essentials 9.10 installation media, follow these steps:

1   Log on as `root` to the system where Oracle is installed.

2   Copy the `db_utils.tar` file, which is available on the installation media, into a local directory on the system where Oracle is installed.

3   Go to the directory where you placed the `db_utils.tar` file.

4   Extract the contents of the `db_utils.tar` file by running the following command:

   `tar -xvf db_utils.tar`

5   Go to the `dbutil` directory under the directory where you extracted the contents of the `db_utils.tar` file:

   `cd` <*Extract_Dir*>`/dbutil`

   In this instance, <*Extract_Dir*> is the directory where you extracted the contents of the `db_utils.tar` file.

6   Run the following command as `root`:

   `umask o+r`

7   Run the following command as `root`:

   `./createDatabase_interactive.sh`

   The `createDatabase_interactive.sh` script starts an interactive session to create the new Oracle instance and the following prompt appears:

   `Enter Database SID [bsaedb]:`

8   Type the database SID of your choice, and then press **ENTER**. The following prompt appears:

   `Enter Oracle Base Directory [/u01/app/oracle]:`

9   Type the complete path to the Oracle base directory on the system, and then press **ENTER**. The following prompt appears:

```
Enter BSAE Admin Directory [/u01/app/oracle/admin/bsaedb]:
```

10 Type the complete path to the administrative directory for the database instance, and then press **ENTER**. The following prompt appears:

```
Enter User Data Mount Point 1 [/u01/oradata/bsaedb]:
```

11 Type the complete path to the first data mount point for the database instance, and then press **ENTER**. The following prompt appears:

```
Enter User Data Mount Point 2 [/u02/oradata/bsaedb]:
```

12 Type the complete path to the second data mount point for the database instance, and then press **ENTER**. The following prompt appears:

```
Enter User Data Mount Point 3 [/u03/oradata/bsaedb]:
```

13 Type the complete path to the third data mount point for the database instance, and then press **ENTER**. The following prompt appears:

```
Enter User Data Mount Point 4 [/u04/oradata/bsaedb]:
```

14 Type the complete path to the fourth data mount point for the database instance, and then press **ENTER**. The following prompt appears:

```
Enter Oracle Home [/u01/app/oracle/product/10.2.0/db_1]:
```

15 Type the complete path to the Oracle home directory, and then press **ENTER**. The following prompt appears:

```
Enter Database Hostname [hostname.domain.com]:
```

16 Type the hostname of the system, and then press **ENTER**. The following prompt appears:

```
Enter Database Port Number [1521]:
```

17 Type the port used by Oracle (default: 1521), and then press **ENTER**. The following prompt appears:

```
Enter Database Password:
```

18 Type a password for the database instance you are going to create, and then press **ENTER**.

> Do not leave this field blank.

The following prompt appears:

```
Verify Database Password:
```

19 Type the password again, and then press **ENTER**.

The script shows a list of settings that you chose.

20 Type **Go**.

The script starts creating a new database instance for use with BSA Essentials.

After successful creation of the database instance, the following message appears:

```
OMDB database instance has been created.
```

The following installation log files are placed into the /var/log/HP/BSAE directory:

- `install.log`
- `install_stdout.log`
- `install_stderr.log`
- `dbinstall.log`

Creating the Database Instance with the Installation Wizard

To create only the BSA Essentials database instance, follow these steps:

1 Log on as root on the server where you have Oracle installed and want to create the database instance.

2 Mount the BSA Essentials installation media.

3 Start the BSA Essentials installer using the following command:

   `/<mnt_point>/install.bin`

4 Click **Next** to begin the installation.

5 Accept the license agreement and click **Next**.

6 Select **Dual Server Installation (Database Server)** for the installation type and click **Next**.

7 Enter the database connection information described below and click **Next**.

   • **Database Server Name**: Localhost or a resolvable name of the current server.

   • **Database Port**: The port number for the database instance.

   • **Database SID**: The System ID (SID) for the database instance.

   • **Database Service Name**: The name of the Oracle database service.

8 Enter the password that you want created for the database administrator, enter the same password in the Confirm Password box, and then and click **Next**.

9 Enter the database instance information described below and click **Next**.

   • **Oracle Home Directory**: This field is pre-populated with the value you set for the `$ORACLE_HOME` environment variable. See Before You Install BSA Essentials **on page 13**. If you want to use another value, you must exit the installation and reset this variable in the Oracle user environment.

   • **Oracle Admin Directory**: The location of the Oracle admin directory. This directory is usually named `/u01/app/oracle/admin/<SID>` where `<SID>` is the SID you provided.

   • **Oracle Data Directory 1**: The location where you want to create the first directory for Oracle data for the database instance. This directory is usually named `/u01/oradata/<SID>` where `<SID>` is the SID you provided.

   • **Oracle Data Directory 2**: The location where you want to create the second directory for Oracle data for the database instance. This directory is usually named `/u02/oradata/<SID>` where `<SID>` is the SID you provided.

   • **Oracle Data Directory 3**: The location where you want to create the third directory for Oracle data for the database instance. This directory is usually named `/u03/oradata/<SID>` where `<SID>` is the SID you provided.

   • **Oracle Data Directory 4**: The location where you want to create the fourth directory for Oracle data for the database instance. This directory is usually named `/u04/oradata/<SID>` where `<SID>` is the SID you provided.

If an Oracle listener configuration file is found at the file location `ORACLE_HOME/network/admin/listener.ora`, then you will be prompted to choose between overwriting the configuration file or manually configuring the listener. A template is provided for manual

configuration in `ORACLE_HOME/network/admin/bsae.listener.ora`. See the Oracle documentation for configuration instructions. You must have a listener configured before you can proceed with the installation.

10 Review the Installation Summary and click **Install** to complete the installation.

If you cancel the installation or if the installation fails, then all BSA Essentials files and directories that have been installed will be removed unless you have another BSA product installed on this server. If you have another BSA product installed, then any files that are required for that product will not be removed. You will need to remove any database components that have been created. See Removing the BSA Essentials Database Instance on page 84.

The following installation log files are placed into the `/var/log/HP/BSAE` directory:

- `install.log`
- `install_stdout.log`
- `install_stderr.log`
- `dbinstall.log`

Dual Server Installation—BSA Essentials Core Server

▶ You must already have the BSA Essentials database instance created on the Oracle server before you install the BSA Essentials Core Server.

All database information that is requested during the Core Server installation should be the values you provided when you created the BSA Essentials database instance.

Installing with the Installation Wizard

To install only the BSA Essentials Core Server with the installation wizard, complete the following steps:

1 Log on as root on the server where you want to install the BSA Essentials Core Server.

2 Mount the BSA Essentials installation media.

3 Start the BSA Essentials installer using the following command:

    /<mnt_point>/install.bin

4 Click **Next** to begin the installation.

5 Accept the license agreement.

6 Select **Dual Server Installation (Core Server)** for the installation type and click **Next**.

7 Enter the database connection information described below and click **Next**.

- **Database Server Name**: A resolvable name of the server where you created the database instance.

- **Database Port**: The port number for the database instance.

- **Database SID**: The System ID (SID) for the database instance.

- **Database Service Name**: The name of the Oracle database service.

8   Enter the database administrator password, enter the same password in the Confirm Password box, and then click **Next**.

9   Enter the port numbers for BSA Essentials described below and click **Next**.

- **Core Hostname**: The fully qualified domain name of the server. Do not enter localhost.

- **HTTPS Port**: The port where the BSA Essentials Web Client will connect.

- **Rsync Port**: The port number that will be used by the data miner.

- **RMI Port**: The port used by the BSA Essentials Java Client.

10 Enter the email server and port, which are used to email reports, and click **Next**.

- **SMTP Server**: The fully qualified domain name of your email server.

- **SMTP Port**: The port number used by your email server.

11 Enter the password you wish to use for the BSA Essentials administrator, enter the same password in the Confirm Password box, and then click **Next**.

12 Enter the crypto keystore passphrase, enter the same passphrase in the Confirm Passphrase box, and then click **Next**.

13 Select **Enable user import** if you want to create and update user and group information from data collected by the data miner from Server Automation, and then click **Next**.

> If you have selected this option, you must still install the data miner and complete the steps in the *Importing Users From Server Automation* section of the *BSA Essentials Administrator Guide* for user import to work. However, there is no need to follow the procedure described in the *Importing Users From Server Automation > Setting the 'User Importing Enabled' Property* section of the *BSA Essentials Administrator Guide*.

14 Enter the **Reporting Administration HTTP Port**, which is the port used by the BusinessObjects administration client, and click **Next**.

See *Central Management Console (CMC) Admin Tasks* in the *BSA Essentials Administrator Guide* for information about using the BusinessObjects administration client to perform tasks for BSA Essentials.

15 Enter the directory where you want to install the Live Network Connector (LNc) and click **Next**.

16 Review the Installation Summary and click **Install** to complete the installation.

Installing from the Command Line

To use the installation program (`install.bin`) to install the BSA Essentials Core Server, follow these steps:

1   Log on as root on the server where you want to install the BSA Essentials Core Server.

2   Mount the DVD.

3   Go to the media root (`cd /<mnt_point>/`).

4   Run the following command:

```
./install.bin -i console
```

The `install.bin` program starts an interactive session to install the BSA Essentials Core Server and the following prompt appears:

```
PRESS <ENTER> TO CONTINUE:
```

5   Press **ENTER**. The license agreement for BSA Essentials appears.

6   Press **ENTER** to scroll through the license agreement, and then press **Y** to accept the license agreement. The following prompt appears:

```
Choose Install Set
------------------
Please choose the Install Set to be installed by this installer.
1- Single Server Installation (All Features)
2- Dual Server Installation (Database Server)
3- Dual Server Installation (Core Server)
ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT
```

7   Type **3**, and then press **ENTER**. The following prompt appears:

```
Warning (Collect Diskspace)
---------------------------
Check Sizing Guide for recommended diskspace for data collect directory.
Free Diskspace Available:    <number_of_bytes> bytes
```

If the available diskspace matches (or exceeds) the requirement, press **ENTER**. The following prompt appears:

```
Database Connection
-------------------
Enter requested information needed for setup of Database Connections to
Database Instance
Database Server Name (DEFAULT: localhost):
```

8   Type the hostname of the system where the Oracle database is installed, and then press **ENTER**. The following prompt appears:

```
Database Port (Default: 1521):
```

9   Type the port used by Oracle, and then press **ENTER**. The following prompt appears:

```
Database SID (Default: bsadb):
```

10 Type the database SID that you created on the Oracle server, and then press **ENTER**. The following prompt appears:

```
Database Service Name(Default: bsadb.world):
```

11 Type the database service name of your chose while creating the database instance, and then press **ENTER**. The following prompt appears:

```
Database Admin User Password
----------------------------
This installation requires a password to continue. Enter a password to use
for the CMDB_ADMIN database user account.
Please Enter the Password:
```

12 Type a password for the user, and then press **ENTER**. The following prompt appears:

```
Confirm Password:
```

13 Type the password again, and then press **ENTER**. The following prompt appears:

```
Core Platform
```

```
--------------
Enter a Fully Qualified Domain Name that is externally resolvable for this
server and enter the TCP ports that are externally accessible and available
on this server.
Core Hostname (DEFAULT: <hostname.domain.com>):
```

14 Type the fully qualified domain name of the server, and then press **ENTER**. The following prompt appears:

```
HTTPS Port (DEFAULT: 8443):
```

15 Type the HTTPS port for the server (the port where the BSA Essentials Web Client will connect), and then press **ENTER**. The following prompt appears:

```
RSync Port (DEFAULT: 8873):
```

16 Type the RSync port for the server (the port number that will be used by the data miner for data transfer), and then press **ENTER**. The following prompt appears:

```
RMI Port (DEFAULT: 14445):
```

17 Type the RMI port for BSA Essentials (the port used by the BSA Essentials Java Client), and then press **ENTER**. The following prompt appears:

```
Core Platform Mail Configuration
--------------------------------
Enter mail SMTP name and port information
SMTP Server (DEFAULT: localhost):
```

18 Type the fully qualified domain name of the SMTP server that you want to use with BSA Essentials for emailing reports, and then press **ENTER**. The following prompt appears:

```
SMTP Port (DEFAULT: 25):
```

19 Type the port used by the above server, and then press **ENTER**. The following prompt appears:

```
Enter Admin Password
--------------------
This installation requires a password for the BSA Essentials Admin User.
Please Enter the Password:
```

20 Type the password you want to use for the BSA Essentials administrator, and then press **ENTER**. The following prompt appears:

```
Confirm Password:
```

21 Type the same password again, and then press **ENTER**. The following prompt appears:

```
Enter Crypto Keystore Passphrase
--------------------------------
This installation requires a passphrase for the BSA Essentials Crypto
Keystore.
Please Enter the Passphrase:
```

22 Type the passphrase you want to use, and then press **ENTER**. The following prompt appears:

```
Confirm Passphrase:
```

23 Type the same passphrase again, and then press **ENTER**. The following prompt appears:

```
User Import from Datasource
---------------------------
Select to enable user import feature.
```

```
->1- User Import Enabled
2- User Import Disabled
ENTER THE NUMBER OF THE DESIRED CHOICE OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:
```

24 Do one of the following:

- Type **1** to enable user import

- Type **2** to disable user import

▶ If you have selected this option, you must still install the data miner and complete the steps in the *Importing Users From Server Automation* section of the *BSA Essentials Administrator Guide* for user import to work. However, there is no need to follow the procedure described in the *Importing Users From Server Automation > Setting the 'User Importing Enabled' Property* section of the *BSA Essentials Administrator Guide*.

25 Press **ENTER**. The following prompt appears:

```
Reporting Server
----------------
Enter the Reporting Server Configuration Port for BusinessObjects
Reporting Feature.
Reporting Administration HTTP Port (DEFAULT: 8080):
```

26 Type the port that will be used by the BusinessObjects administration client, and then press **ENTER**. The following prompt appears:

```
Pre-Installation Summary
-------------------------------
Please review the following before continuing
Product Name:
    BSA Essentials

Install Folder:
    /opt/HP/BSAE

Install Set:
    Dual Server Installation (Core Server)

Product Feature:
User and Administration Manuals,
HP Lightweight Single-SignOn,
Core Platform,
Core Administration Console,
Reporting Universe,
BusinessObjects Administration,
BusinessObjects Reporting

PRESS <ENTER> TO CONTINUE:
```

27 Press **ENTER**. The `install.bin` program starts installing the BSA Essentials Core Server.

After installation, the following message appears:

```
Installation Complete
---------------------
Congratulations. BSA Essentials has been successfully installed.
View install logs at:  /var/log/HP/BSAE
```

28 Press **ENTER** to exit the installer.

If you cancel the installation or if the installation fails, then all BSA Essentials files and directories that have been installed will be removed unless you have another BSA product installed on this server. If you have another BSA product installed, then any files that are required for that product will not be removed. You will need to remove any database components that have been created. See Removing the BSA Essentials Database Instance on page 84.

The following log files are placed into the `/var/log/HP/BSAE` directory:

- `install.log`
- `install_stdout.log`
- `install_stderr.log`

The BSA Essentials installer places the uninstaller program and documentation in `/opt/HP/BSAE`.

Post Installation Considerations

The following sections outline administrative tasks you may want to perform soon after installation.

Changing BSA Essentials Passwords

After installation, if you want to change the database instance password, keystore passphrase, or the BSA Essentials administrator password, see the *Core Server Administration* section in the *BSA Essentials Administrator Guide*.

Administrating Linux Accounts

As part of BSA Essentials installation, the `omdb` and `oracle` Linux user accounts are created. If you have a company policy that expires user accounts if they are inactive for a period of time, you must configure these accounts on your Linux system so that they do not expire. These accounts never log in so if they are not explicitly set to not expire, the accounts will be terminated as governed by your company's expiration policy. This will cause problems with the data miner's ability to pass data to the BSA Essentials Core Server because account termination causes directories to be removed that are used by the data miner in the data transfer process.

5 Installing BSA Essentials Data Miners

About Data Miners

The function of a data miner is to collect data on the source systems. So when you successfully configure a data miner, its first task will be to collect the current state information from the source system and send that information to the HP BSA Essentials Core Server for loading. The amount of data in your source system at the time the data miner is installed will directly affect the amount of time it will take for this data to be available for reporting. In some cases, it can be as much as several days.

Factors in your environment to consider when estimating the time it will take to have available data are the speed of the hardware, the number of managed servers, and the number of jobs and job content being minded.

Before You Install a Data Miner

If the data miner is installed on a server that is remotely located from the data source server, set the time zone on the server where the data miner is installed to the same time zone as the data source. You may experience problems if these time zones are different.

Data Miner Configuration Utility

You will need to pre-register your data miner on the BSA Essentials server with the help of the data miner configuration utility (`dmconfig.sh`). The utility helps you set up all the information needed by a data miner to connect to its data source. As part of the process, a registration token is generated that you will need when you configure the data miner.

You can use one of two methods:

Storing the Administrator Password for the Configuration Utility

When you run the pre-registration script, you will be asked to enter the BSA Essentials administrator password. You can provide this password in a configuration file to avoid entering it multiple times; however, care must be taken because the password is saved in clear text.

> Storing the administrator password in `dmconfig.properties` is not recommended for production environments because the password is stored in the file in clear text. If you do store the password, you should remove it from the file after you pre-register the data miner.

To add the administrator password to the `dmconfig.properties` file, perform the following steps:

1 Open the file `dmconfig.properties` file in a text editor. This file is located in `/opt/opsware/omdb/bin`.

2 Add the following line:
   `password=<admin_password>`
   where `<admin_password>` is the BSA Essentials administrator password.

For details on the parameters used by the pre-registration script, see Setting Configuration Options Using dmconfig.sh on page 53, or run the following commands at the command prompt:

1 **`cd /opt/opsware/omdb/bin`**

2 **`./dmconfig.sh -help`**

Pre-registering a Data Miner from the Command Line

This section presents how to pre-register a data miner from the command line.

Pre-registering a Data Miner for SA and Oracle

To pre-register a data miner for SA, perform the following steps:

1 Log on to the BSA Essentials server.

2 `cd /opt/opsware/omdb/bin`

3 `./dmconfig.sh -add -name` *`<SA_Server_FQDN>`* `-desc SA on SAserver`
   `-type SAS -driver Oracle Driver -properties`
   `database=`*`<SA_Server_FQDN>`*`:`*`<Oracle_Port>`*`:`*`<SID>`*`,user=`*`<user>`*`,`
   `password=`*`<password>`*

The database and user/password information in this example are for the SA database, not BSA Essentials.

> Write down the registration token. A registration token consists of upper-case alphanumeric characters. You will need to enter it when configuring the data miner on the SA server where you install the data miner.

Pre-registering a Data Miner for NA and Oracle

To pre-register a data miner for NA and Oracle, perform the following steps:

1 Log on to the BSA Essentials server.

2 `cd /opt/opsware/omdb/bin`

3 `./dmconfig.sh -add -name NA -desc NA on NAserver -type NAS -driver Oracle Driver -properties database=NAserver.example.com:1521:<SID>,user=<user>,password=<password> [ -settings EtlTableOwnerOverride=database_username]`

▶ Write down the registration token. A registration token consists of upper-case alphanumeric characters. You will need to enter it when configuring the data miner on the NA server you install the data miner onto.

- The database and user/password information in this example are for the NA database, not BSA Essentials.

- If you are prompted for a user name, enter `cmdb_admin`.

- If you are prompted for a password, enter *omdb_admin_password* (the password set during the BSA Essentials install for the BSA Essentials Database administrator).

▶ If NA is not installed with a user name of `system`, you must set the `EtlTableOwnerOverride` value as shown in step 3 on page 49. Set the value to the name of the database user who owns the table. For example, if the database user name is dbo, add the following at the end of the command:

`-settings EtlTableOwnerOverride=dbo`

Pre-registering a Data Miner for NA and SQL Server

To pre-register a Data Miner for NA and SQL Server 2005, perform the following steps:

1 Log on to the BSA Essentials server.

2 `cd /opt/opsware/omdb/bin`

3 `./dmconfig.sh -add -name sqlserver05b -desc NA on MSSQL -type NAS -driver SQL Server -properties database=sqlserver05b.example.com:1433/NAdatabasename,user=<user>,password=<password> [ -settings EtlTableOwnerOverride=database_username]`

▶ Write down the registration token. A registration token consists of upper-case alphanumeric characters. You will need to enter it when configuring the data miner on the NA server where you install the data miner.

- The database *NAdatabasename* and user/password information in this example are for the NA database, not BSA Essentials.

- If you are prompted for a user name, enter `cmdb_admin`.

- If you are prompted for a password, enter *omdb_admin_password* (the password set during the BSA Essentials install for the BSA Essentials Database administrator).

▶ If NA is not installed with a user name of `system`, you must set the `EtlTableOwnerOverride` value as shown in step 3 on page 49. Set the value to the name of the database user who owns the table. For example, if the database user name is dbo, add the following at the end of the command:

`-settings EtlTableOwnerOverride=dbo`

Pre-registering a Data Miner for OO and SQL Server

To pre-register a data miner for OO and SQL Server, perform the following steps:

1   Log on to the BSA Essentials server.

2   `cd /opt/opsware/omdb/bin`

3   `./dmconfig.sh -add -name sqlserver05b -desc OO on MSSQL -type PAS -driver SQL Server -properties database=sqlserver05b.example.com:1433/`*`OOdatabasename`*`,user=<`*`user`*`>,password=`*`password`* `[ -settings EtlTableOwnerOverride=`*`database_username`*`]`

▶   Write down the registration token. A registration token consists of upper-case alphanumeric characters. You will need to enter it when configuring the data miner on the OO server where you install the data miner.

- The database *OOdatabasename* and user/password information in this example are for the OO database, not BSA Essentials.

- If you are prompted for a user name, enter `cmdb_admin`.

- If you are prompted for a password, enter *omdb_admin_password* (the password set during the BSA Essentials install for the BSA Essentials database administrator).

▶   If OO is not installed with a user name of `system`, you must set the `EtlTableOwnerOverride` value as shown in step 3 on page 50. Set the value to the name of the database user who owns the table. For example, if the database user name is `dbo`, add the following at the end of the command:

`-settings EtlTableOwnerOverride=dbo`

Pre-registering a Data Miner for OO and Oracle

To pre-register a data miner for OO and Oracle, perform the following steps:

1   Log on to the BSA Essentials server.

2   `cd /opt/opsware/omdb/bin`

3   `./dmconfig.sh -add -name nc34.pas -desc nc34 OO Db -type PAS -driver Oracle Driver -properties database=oo.example.com:1521:<`*`SID`*`>,user=pas,password=cmdb_admin [ -settings EtlTableOwnerOverride=`*`database_username`*`]`

▶   Write down the registration token. A registration token consists of upper-case alphanumeric characters. You will need to enter it when configuring the data miner on the OO server where you install the data miner.

The database and user/password information in this example are for the OO database, not BSA Essentials.

▶   If OO is not installed with a user name of `pas`, you must set the `EtlTableOwnerOverride` value as shown in step 3 on page 50. Set the value to the name of the database user who owns the table. For example, if the database user name is `dbo`, add the following at the end of the command:

`-settings EtlTableOwnerOverride=dbo`

Pre-registering a Data Miner for Storage Visibility and Automation and Oracle

To pre-register a data miner for Storage Visibility and Automation and Oracle, perform the following steps:

1   Log on to the BSA Essentials Core Server.

2   `cd /opt/opsware/omdb/bin`

3   `./dmconfig.sh -add -name ASAS -desc ASAS on ASAS Server -type ASAS -driver Oracle Driver -properties database=<BSA_Essentials_DB_Server>:<Oracle_Port>:<SID>,user=asas_rpt_ user,password=<BSA_Essentials_DB_Password>`

➤   Write down the registration token. A registration token consists of upper-case alphanumeric characters.

In this instance:

- *<BSA_Essentials_DB_Server>* is the fully qualified domain name of the BSA Essentials database server (for a single server installation, use the fully qualified domain name of the system where you installed BSA Essentials).

- *<Oracle_Port>* is the port used by the BSA Essentials database instance.

- *<SID>* is the system ID of the BSA Essentials database instance.

- *<BSA_Essentials_DB_Password>* is the password of the BSA Essentials database instance.

Pre-registering a Data Miner Interactively Using dmconfig.sh

You need to pre-register your data miner on the BSA Essentials server in order to set up all of the information needed by a data miner to connect to its data source. As part of the process, a registration token is generated that you will need when configuring the data miner on the server where you install the data miner. The example in this section displays pre-registering a data miner for SA. To pre-register a data miner interactively with dmconfig.sh, perform the following steps:

1   Run the data miner configuration tool dmconfig.sh with the following two commands:

```
cd /opt/opsware/omdb/bin
./dmconfig.sh
```

The following prompt should now be displayed:

`[ DMConfigure <]`

2   At the [DMConfigure <] prompt, the following commands are supported:

- **ADD**: Displays the prompts that enable you to generate a registration token.

- **UPDATE**: Displays a list of properties that you can edit by entering key value pairs. You press Enter to finish. Note that after you perform the initial add command, you need to perform the update command for the specific database configuration for the data miner source.

- **LIST**: Displays current data miner configurations.

- **HELP**: Displays a list of available commands.

- **QUIT**: Exits the configuration tool.

3   (Optional) You may be prompted for the database information for the BSA Essentials
    server. Unless you made changes during the installation, use the following values. (If not
    prompted for some or all of these, it is because the values were found in
    dmconfig.properties.)

    •   Database [host:port:sid]: localhost:1521:cmdb

    •   Userid: cmdb_admin

    •   Password: the password set during the BSA Essentials install for the BSA Essentials
        Database administrator

4   Type add and then press Enter.

5   Follow the prompts to generate a new registration token.

    •   **Name**: Enter a short name for the data source you are planning to mine. Names are
        case-sensitive.

        Example: saserver

    •   **Description**: Enter a meaningful name.

        Example: SA on SAserver

    •   **Connection Template ID**: Enter the number listed for Oracle Driver (typically 1).

    Pick source ID: Enter the number for the appropriate data source type.
    Example: 1.

    The following example shows how this step should display:

```
[ DMConfigure <] add
Name : saserver
Description : SA on SAserver
ID                NAME
----------------------
1                 Oracle Driver
2                 SQL Server
Connection template ID : 1
ID                NAME
----------------------
1                 SA
2                 NA
3                 ASAS
5                 OO
Source type id : 1
REG TOKEN is WD2K5R
```

▶   Write down the registration token. A registration token consists of upper-case
    alphanumeric characters. In this example the registration token is the string
    WD2K5R. You will need to enter it when configuring the data miner on the server
    where you install the data miner.

    Now that the initial add is complete, you need to update the specific database
    configuration for the data miner source.

6   At the [DMConfigure # <] prompt type update and then press Enter. The following
    prompt appears:

```
[ DMConfigure # <] update
ID                NAME                 DESCRIPTION            TOKEN
-----------------------------------------------------------------
100               saserver             SA on SAserver        WD2K5R
```

```
ID to update :
```

7   Select the configuration you want to update. Because there is only a single configuration at this point, select 100.

8   Set the connection information that the data miner (to be installed shortly on the SA server) will use to connect to its local source database. Each time you enter a value, the current values for the data miner source will display.

These values are for the database to be data mined, not the BSA Essentials Database. Your values will look similar to the following example:

```
database=10.124.6.02:1521:truth (Note that database is of the format
host:port:sid)
user=<user>
password=<password>
```

9   When you are finished, press Enter to exit edit mode and return to the prompt.

10 Type quit, and then press Enter. The BSA Essentials server-side configuration for the data miner is now complete.

Setting Configuration Options Using dmconfig.sh

The data miner periodically connects to BSA Essentials and retrieves miscellaneous configuration settings. You can set the following values:

Table 9   Data Miner Configuration Settings

Parameter	Definition	Default
VaultConfigFileDir	(SA only) specifies the location of the vault configuration file	/etc/opt/opsware/vault/
InitialCollectionDate	the start date and time of a data miner. Set a future value to delay the start.	1980-01-01 12.00.00
DataFileChunkSize	the number of transactions in a data miner data file	1500
FileTransferGroupSize	the number of files per rsync transfer, per zip	250
FileTransferInterval	the frequency of file transfer tasks, in milliseconds	30 seconds (30000)

Table 9 Data Miner Configuration Settings (cont'd)

Parameter	Definition	Default
DataFileUseClearText (Use for debugging only)	The data miner base64 encodes data to support both UTF8 and embedded CDATA. Set to true to use only CDATA. Note: If true, data xml may fail to load, and some occurrences of UTF8 data may cause the data file to fail signature validation.	false
EtlTableOwnerOverride	ETL specified owner	SYSTEM
TriggerMineHistoryDays	Number of days of processed transaction history for the NA or OO trigger package to keep	2

To set these parameters, at a prompt enter the following command:

```
./dmconfig.sh -update -name {dm name} -settings setting=value[,
setting=value]
```

▶ If NA or OO is not installed with a user name of `system`, you must set the `EtlTableOwnerOverride` value to the name of the database user who owns the table. The value of *<dbo>* depends on your database type and installation. For example, if the database user name is `dbo`, add the following at the end of the command:

```
-settings EtlTableOwnerOverride=dbo
```

Installing and Configuring Data Miners for SA

SA is configured by default to retain transactions for seven days. If the data miner remains inactive for longer than the retention period it is possible that SA transactions will not be mined. You should:

- Monitor that the data miner remains active on the SA server
- Set the monitoring interval to less than the default SA retention period

▶ Always install the data miner in the `/opt/opsware/dataminer` directory on the SA server.

Enabling Mesh Vault Mining For an SA Multimaster Mesh

A data miner collects data continuously for both local and remote transactions in an SA multimaster mesh. Only one data miner can be connected to a specific BSA Essentials server to an SA multimaster mesh, you must not install data miners on more than one server in the multimaster mesh. You must install the data miner to an SA server in the mesh that a vault daemon runs on.

To enable SA mesh vault mining, the following steps must be performed before installing the data miner:

➤ Log on as a user that has the "Configure Opsware" permission.

1 Using the SAS Web Client, log in to a server in the multimaster mesh.

2 In the Navigation Panel, click **Server ➤ Managed Servers.**

3 In the main pane, find the row for the server where you intend to install the SA data miner onto in Installing a Data Miner on an SA Server on page 55, then note the value in the Facility column of that row.

4 In the Navigation Panel, click **Administration ➤ System Configuration**, and then click the Facility name that matches the value you noted in the previous step.

5 Set the `cmdbshareddirectory` parameter to `/var/opt/opsware/vault/spool.`

6 Set the `cmdbbufferflushsize` parameter to `15360.`

7 Set the `cmdbbufferflushtimeout` parameter to `2000.`

8 Set the `cmdbmaxfileage` parameter to `7.`

9 Click **Save**.

10 Restart the vault daemon on the server where the data miner is installed.

Installing a Data Miner on an SA Server

Prerequisite

A prerequisite for SA multimaster mesh is that the data miner must be installed on the system where the vaultdaemon is running. In addition, certain OCC Client jar files (available with the Command Center component of SA) and the `vault.jar` file must be present on the datasource system where the data miner is to be installed. If the Command Center component is not present on the system, you must copy the OCC Client jar files to the datasource system from a system where the Command Center component is installed.

Before installing the data miner, follow these steps:

1 Log on to the SA system (where the vaultdaemon is running) as root.

2 Make sure that the `vault.jar` file is present in the `/opt/opsware/vault/bin` directory.

➤ If the `vault.jar` file is present, skip to step 3.

If the `vault.jar` file is *not* present in `/opt/opsware/vault/bin`, manually copy the file from a system where the Model Repository Multimaster Component is installed to the system where you want to install the data miner:

a **mkdir -p /opt/opsware/vault/bin**

b **cd /opt/opsware/vault/bin**

c **scp**
   *<SA_Model_Repository_Multimaster_Component>***:/opt/opsware/vault/bin/**
   vault.jar.

In this instance, *<SA_Model_Repository_Multimaster_Component>* is the fully qualified domain name of the system where the Model Repository Multimaster Component is installed.

3 Run the following commands to copy the OCC Client jar files to the SA system from the system where the Command Center component is installed:

> Skip this step if the Command Center component is already installed on this system.

a **mkdir -p /opt/opsware/occ/occ/lib**

b **cd /opt/opsware/occ/occ/lib**

c **scp** *<SA_Command_Center>***:/opt/opsware/occ/occ/lib/mail.jar.**

d **mkdir -p /opt/opsware/occclient**

e **cd /opt/opsware/occclient**

f **scp** *<SA_Command_Center>***:/opt/opsware/occclient/wlclient.jar.**

g **scp** *<SA_Command_Center>***:/opt/opsware/occclient/jsch-latest.jar.**

h **scp** *<SA_Command_Center>***:/opt/opsware/occclient/json.jar.**

i **scp** *<SA_Command_Center>***:/opt/opsware/occclient/opsware_rmi.jar.**

j **scp** *<SA_Command_Center>***:/opt/opsware/occclient/spoke_client.jar.**

k **scp** *<SA_Command_Center>***:/opt/opsware/occclient/twistclient.jar.**

l **scp** *<SA_Command_Center>***:/opt/opsware/occclient/cfl.jar.**

In this instance, *<SA_Command_Center>* is the fully qualified domain name of the system where the SA Command Center component is installed.

Installation Procedure

To copy the data miner files to the SA server and install the data miner on the SA server, perform the following steps:

1 Log on to the SA server.

2 Run the following commands to copy `dataminer.tar` from `/opt/opsware/omdb/dist` on the BSA Essentials server to the `/opt/opsware/dataminer` directory on the SA server.

a **mkdir -p /opt/opsware/dataminer**

b **cd /opt/opsware/dataminer**

c **scp youromdbserver:/opt/opsware/omdb/dist/dataminer.tar**

3 Extract the contents of the `dataminer.tar` file:

tar -xvf dataminer.tar

4 Run the data miner setup using the following command:

```
./dmsetup.sh
```

The following prompt appears:

```
Please enter the registration token provided after this dataminer was
configured on the OMDB server: []
```

5   Enter the registration token that was generated on the BSA Essentials server. The following prompt appears:

```
Updating token in dataminer.conf

Would you like to have this dataminer automatically start up when the
system reboots? y/n:
```

6   Type **y**, and then press **Enter**. The following prompt appears:

```
Dataminer is now configured for startup:
```

You can also use command-line parameters with dmsetup.sh to run non-interactively, as described in the next section.

Running dmsetup.sh Using Command-line Parameters

You can use optional parameters when launching dmsetup.sh. For example, entering the command dmsetup.sh --help on a server where the data miner is installed will display the available parameters and the definitions of those parameters. The table below displays the available parameters and their definitions.

Table 10   dmsetup.sh

Parameter	Use
--token *Token*	Configure the data miner to use the token *Token*
--autostart	Sets the data miner to start at system boot
--noautostart	Sets the data miner to not automatically start at system boot
--unregister	Removes the specified data miner from the list of data miners running on the server
--register	Adds the specified data miner to the list of data miners running on the server
--help	Displays the parameters usable with dmsetup.sh and their definitions

When you run dmsetup.sh, it creates or updates a file /etc/opt/opsware/omdb/dataminers.conf that includes information on all data miners installed on that server. If the dataminers.conf file exists when you install a new data miner, dmsetup.sh updates the file with the new information, and adds 1 to the ConfiguredDataMiners value. When uninstalling a data miner, dmsetup.sh comments out the specified data miner entry in dataminers.conf, and then decreases the ConfiguredDataMiners value by 1.

Installing and Configuring Data Miners for NA

To install a data miner for NA, copy the data miner from the BSA Essentials server, install the Transaction Mining Triggers for the type of database the NA application uses, configure and install the data miner on the NA server, then start the data miner.

For optimal performance, it is highly recommended that you install the data miner on the server hosting the NA database. However, if you must have a dual server configuration where you install the data miner on an NA server machine that is distinct from the NA database server, you must copy the data miner TAR file to both machines to successfully install the data miner and the transaction mining triggers as described in the following tasks.

This section describes the following tasks:

▶ Always install the data miner in the `/opt/opsware/dataminer` directory on the NA server.

Installing and Configuring a Data Miner on an NA Server on Linux or Solaris

To install and configure an NA data miner on Linux or Solaris, perform the following tasks in this order:

Copying Data Miner Files to the NA Server

To copy the data miner files to the data source servers, perform the following steps:

▶ In an NA dual server configuration, the data miner files must be copied to both the NA server and NA database server machines as already indicated.

1 Log on to the NA server.

2 Run the following command to copy `dataminer.tar` from `/opt/opsware/omdb/dist` on the BSA Essentials server to the `/opt/opsware/dataminer` directory on the NA server:

   **scp yourbsaeserver:/opt/opsware/omdb/dist/dataminer.tar
   /opt/opsware/dataminer**

3 Extract the contents of the `dataminer.tar` file:

   a **cd /opt/opsware/dataminer**

   b **tar -xvf dataminer.tar**

Installing Transaction Mining Triggers for NA with Oracle on Linux or Solaris

This section describes how to install transaction mining triggers for an NA installation on a Linux or Solaris server using Oracle.

You will need the following information before you begin:

- The Oracle SID of the NA database instance
- The Oracle database user owning the NA table
- An existing tablespace with 100MB available for BSA Essentials transaction data - for a large NA installation this may need to be adjusted.

The Oracle user `OPSW_OMDBXM` must have its disk quota setting set to unlimited to auto-extend the tablespace used for NAS database transaction triggers. If this user's disk quota setting is not set as unlimited, NA users may have problem logging in when OPSW_OMDBXM hits the quota limit.

To prepare for installing transaction mining triggers for NA with Oracle on a Linux or Solaris server, perform the following steps:

1 Log on to the NA database server as user `root`.

2 Type the following commands:

```
chmod 755 /opt/opsware/dataminer/
chmod 755 /opt/opsware/dataminer/triggers
chmod 755 /opt/opsware/dataminer/triggers/oracle
```

3 Type the following command:

```
chown oracle:dba /opt/opsware/dataminer/triggers/oracle/*
```

To install transaction mining triggers on an NA Linux or Solaris server, perform the following steps:

1 Open a command prompt and then log in as the user `oracle`.

2 Type the following command:

```
cd /opt/opsware/dataminer/triggers/oracle
```

3 Type the following command:

```
./deploy_nas_triggers.sh
```

4 Respond to all prompts.

Configuring the Data Miner on the NA Server

To configure the data miner on the data source server, perform the following steps:

1 On the NA server, type the following command:

```
cd /opt/opsware/dataminer
```

2 Run the data miner setup using the following command:

```
./dmsetup.sh
```

The following prompt appears:

```
Please enter the registration token provided after this dataminer was
configured on the OMDB server: []
```

3 Enter the registration token that was generated on the BSA Essentials server. The following prompt appears:

```
Updating token in dataminer.conf
```

```
Would you like to have this dataminer automatically start up when the
system reboots? y/n:
```

4   Type y, then press Enter. The following prompt appears:

```
Dataminer is now configured for startup:
```

5   (Optional) Start the data miner. See

Installing and Configuring the Data Miner Service on an NA Windows Server

To install and configure an NA data miner on Windows, perform the following tasks in this
order:

1

2   Perform one of the following two actions:

  •

      Or

  •

3

4

Copying the Data Miner Service Files to the NA Windows Server

To copy the data miner Service files to the NA Windows server, perform the following steps:

▶   In an NA dual server configuration, the data miner files must be copied to both the NA server
    and NA database server machines as already indicated.

1   On the Windows NA server, create a directory, such as `C:\dataminer`.

2   Copy the `dataminer.zip` from `/opt/opsware/omdb/dist` on the BSA Essentials
    server to a local directory, such as `C:\dataminer`.

3   Unzip the `dataminer.zip` file. Keep the directory structure intact.

Installing Transaction Mining Triggers for NA with Oracle on Windows

This section describes how to install transaction mining triggers for an NA installation on a
Windows server using Oracle.

You will need the following information before you begin:

•   The Oracle SID of the NA database instance

•   The Oracle database user owning the NA table

•   An existing tablespace with 100MB available for BSA Essentials transaction data

The Oracle user `OPSW_OMDBXM` must have its disk quota setting set to unlimited to auto-extend
the tablespace used for NAS database transaction triggers. If this user's disk quota setting is
not set as unlimited, NA users may have problem logging in when OPSW_OMDBXM hits the
quota limit.

To install transaction mining triggers on an NA and Oracle on Windows server, perform the following steps:

1 Log on to the NA database server as a user that is a member of the `ORA_DBA` group.

2 Confirm the `sqlplus.exe` application is in the user's path.

3 In the `C:\dataminer\triggers\oracle` directory, run the following command:

   `deploy_nas_triggers.cmd`

4 Respond to all prompts.

Preparing to Install Transaction Mining Triggers for NA with SQL Server on Windows

This section describes how to identify:

- The name of the NA application schema (the NA Database catalog)
- The name of the user account created during the NA installation (the NA Database user name)

You need these names to either install or uninstall transaction mining triggers for an NA installation on a Windows server using SQL Server.

To find these names, perform the following steps:

1 Start NA.

2 Select System Status in the Admin menu.

3 Select DatabaseMonitor.

4 In the Actions field, select View Details. The Monitor Details page displays.

5 Find and write down the values for

   — Database catalog

   — Database user name

Installing Transaction Mining Triggers for NA with SQL Server on Windows

This section describes how to install transaction mining triggers for an NA installation on a Windows server using SQL Server.

You will need the following information before you begin:

- The name of the NA application schema (the NA Database catalog)
- The name of the user account created during the NA installation (the NA Database user name)

To find these names, perform the steps above in Preparing to Install Transaction Mining Triggers for NA with SQL Server on Windows on page 61.

To install transaction mining triggers on an NA and SQL Server on Windows server, perform the following steps:

1 In the `C:\dataminer\triggers\sqlserver` directory, run the following command:

   `deploy_nas_triggers.cmd`

2 The following prompt appears:

   `Deployment will remove existing OMDB transaction data from previous deployments. Continue? [Y]`

3 Type y, and then press Enter. The following prompt appears:

```
Which SQL Server instance contains the NAS database? [default]
```

4 To accept the default value of SQL Server, press Enter.

Or

Type the name of the SQL Server instance. For example, type `SQLExpress` to select SQL Server Express.

5 The following prompt appears:

```
Which SQL Server database contains the NAS application schema? [default]:
```

6 Type the value of the NA 'Database catalog' you wrote down in Preparing to Install Transaction Mining Triggers for NA with SQL Server on Windows on page 61, and then press Enter. The following prompt appears:

```
Which database user does the NAS application use to connect to the database? [nas]:
```

7 Type the value of the NA 'Database user name' you wrote down in Preparing to Install Transaction Mining Triggers for NA with SQL Server on Windows on page 61, and then press Enter. The following prompt appears:

```
Which database schema contains the NAS application tables? [dbo]:
```

8 To accept the default value dbo, press Enter.

Configuring the Data Miner Service on the NA Windows Server

To configure the data miner Service on the NA Windows server, perform the following steps:

1 On the Windows NA server, using a text editor open the following file:

```
jvm.properties
```

2 Find the following line in the `jvm.properties` file:

```
#JVM-Path=C:\Program Files\Java\j2re1.4.x_x\bin\client\jvm.dll
```

3 Delete only the `#` to uncomment the line.

4 Update the JVM-Path value
`C:\Program Files\Java\j2re1.4.x_x\bin\client\jvm.dll`
to the correct location of `JVM.DLL` for the Java Runtime Environment 1.4.2. JVM versions 1.4x and 1.6 are supported. You can use the same JVM as the OO, NA, or SA system requires.

5 Save the `jvm.properties` file.

6 Edit the `dataminer.conf` file. Find the following line:

```
RegistrationToken=ToKeN
```

Set *ToKeN* to the token generated at registration on the BSA Essentials Server.

Installing the Data Miner Service on an NA Windows Server

To install the data miner service on an NA Windows server, perform the following steps:

1 Open a Windows command prompt.

2 Change directory to `C:\dataminer`.

3 To install the service, run the following command:

```
DataMinerService -install
```

4   (Optional) Start the data miner. See Starting or Stopping a Data Miner on page 71.

The data miner service will start automatically the next time the NA Windows server is restarted.

Installing and Configuring Data Miners for OO

To install a data miner for OO, copy the data miner from the BSA Essentials server, install the Transaction Mining Triggers for the type of database the OO application uses, configure and install the data miner on the OO server, then start the data miner.

For optimal performance, it is highly recommended that you install the data miner on the server hosting the OO database. However, if you must have a dual server configuration where you install the data miner on an OO server machine that is distinct from the OO database server, you must copy the data miner TAR file to both machines to successfully install the data miner and the transaction mining triggers as described in the following tasks.

This section describes the following tasks:

*   Installing and Configuring a Data Miner on a Linux OO Server on page 63.

*   Installing and Configuring the Data Miner Service on the OO Windows Server on page 65

➤   Always install the data miner in the /opt/opsware/dataminer directory on the OO server.

Installing and Configuring a Data Miner on a Linux OO Server

To install and configure the OO data miner on Linux, perform the following tasks in this order:

1   Copying Data Miner Files to the OO Server on page 63.

2   Installing Transaction Mining Triggers for OO with Oracle on Linux on page 64.

3   Configuring the Data Miner on the OO Server on page 64.

➤   On NA and SA, data miner automatically detects JAVA_HOME. For OO on Linux, JRE 1.4.2_15 needs to be the system default, or JAVA_HOME must be set prior to data miner startup. If unsure about configuration, contact BSA Essentials Support.

Copying Data Miner Files to the OO Server

To copy the data miner files to the data source servers, perform the following steps:

➤   In an OO dual server configuration, the data miner files must be copied to both the OO server and OO database server machines as already indicated.

1   Log on to the OO server.

2   Run the following command to copy dataminer.tar from /opt/opsware/omdb/dist on the BSA Essentials server to the /opt/opsware/dataminer directory on the OO server.

    scp <BSA_Essentials_Server>:/opt/opsware/omdb/dist/dataminer.tar
    /opt/opsware/dataminer

3   Extract the contents of the `dataminer.tar` file:

    a   **`cd /opt/opsware/dataminer`**

    b   **`tar -xvf dataminer.tar`**

Installing Transaction Mining Triggers for OO with Oracle on Linux

This section describes how to install transaction mining triggers for an OO installation on a Linux server using Oracle.

You will need the following information before you begin:

- The Oracle SID of the OO database instance
- The Oracle database user owning the OO table
- An existing tablespace with 100MB available for BSA Essentials transaction data

To prepare for installing transaction mining triggers on an OO Linux server, perform the following steps:

1   Log on to the OO database server as `root`.

2   Type the following commands:

```
chmod 755 /opt/opsware/dataminer/
chmod 755 /opt/opsware/dataminer/triggers
chmod 755 /opt/opsware/dataminer/triggers/oracle
```

3   Type the following command:

```
chown oracle:dba /opt/opsware/dataminer/triggers/oracle/*
```

To install transaction mining triggers on the OO Linux server, perform the following steps:

1   Open a command prompt and then log in as the user `oracle`.

2   Type the following command:

```
cd /opt/opsware/dataminer/triggers/oracle
```

3   Type the following command:

```
./deploy_pas_triggers.sh
```

4   Respond to all prompts.

Configuring the Data Miner on the OO Server

To configure the data miner on the data source server, perform the following steps:

1   On the OO server, type the following command:

```
cd /opt/opsware/dataminer
```

2   Run the dataminer setup using the following command:

```
./dmsetup.sh
```

The following prompt appears:

```
Please enter the registration token provided after this dataminer was
configured on the OMDB server: []
```

3   Enter the registration token that was generated on the BSA Essentials server. The following prompt appears:

```
Updating token in dataminer.conf

Would you like to have this dataminer automatically start up when the
system reboots? y/n:
```

4   Type y, then press Enter. The following prompt appears:

```
Dataminer is now configured for startup:
```

5   (Optional) Start the data miner. See

Installing and Configuring the Data Miner Service on the OO Windows Server

To install and configure a data miner on the OO Windows server, perform the following tasks in this order:

Copying the Data Miner Service Files to the OO Server

To copy the data miner files to the data source server, perform the following steps:

▶   In an OO dual server configuration, the data miner files must be copied to both the OO server and OO database server machines as already indicated.

1   On the Windows OO server, create a directory, such as `C:\dataminer`.

2   Copy the `dataminer.zip` from `/opt/opsware/omdb/dist` on the BSA Essentials server to a local directory, such as `C:\dataminer`.

3   Unzip the `dataminer.zip` file. Keep the directory structure intact.

Installing Transaction Mining Triggers for OO with SQL Server on Windows

This section describes how to install transaction mining triggers for an OO installation on a Windows server using SQL Server.

You will need the following information before you begin:

•   The name of the OO application schema

•   The name of the user account created during the OO installation

To install transaction mining triggers on an OO and SQL Server Windows server, perform the following steps:

1   In the `C:\dataminer\triggers\sqlserver` directory, run the following command:

```
deploy_pas_triggers.cmd
```

2   The following prompt appears:

```
Deployment will remove existing OMDB transaction data from previous
deployments. Continue? [Y]
```

3   Type y, and then press Enter. The following prompt appears:

```
Which SQL Server instance contains the PAS database? [default]
```

4   To accept the default value of SQL Server, press Enter.

Or

Type the name of the SQL Server instance. For example, type `SQLExpress` to select SQL Server Express.

5   The following prompt appears:

`Which SQL Server database contains the PAS application schema? [default]:`

6   Type the value of the OO 'Database catalog', and then press Enter. The following prompt appears:

`Which database user does the PAS application use to connect to the database? [pas]:`

7   Type the value of the OO 'Database user name', and then press Enter. The following prompt appears:

`Which database schema contains the PAS application tables? [dbo]:`

8   To accept the default value dbo, press Enter.

Configuring the Data Miner Service on the OO Windows Server

To configure the data miner service on the OO Windows server, perform the following steps:

1   On the Windows OO server, using a text editor open the following file:
     `jvm.properties`

2   Find the following line in the `jvm.properties` file:
     `#JVM-Path=C:\Program Files\Java\j2re1.4.x_x\bin\client\jvm.dll`

3   Delete only the `#` to uncomment the line.

4   Update the JVM-Path value
     `C:\Program Files\Java\j2re1.4.x_x\bin\client\jvm.dll`
     to the correct location of `JVM.DLL` for the Java Runtime Environment 1.4.2. JVM versions 1.4x and 1.6 are supported. You can use the same JVM as the OO, NA, or SA system requires.

5   Save the `jvm.properties` file.

6   Edit the `dataminer.conf` file. Find the following line:

`RegistrationToken=ToKeN`

Set *ToKeN* to the token generated at registration on the BSA Essentials Server.

Installing the Data Miner Service on the OO Windows Server

To install the data miner Service on the OO Windows server, perform the following steps:

1   Open a Windows command prompt.

2   Change directory to `C:\dataminer`.

3   To install the service, run the following command:

`DataMinerService -install`

4   (Optional) Start the data miner. See

The data miner service will start automatically the next time the OO Windows server is restarted.

Installing and Configuring Data Miners for Storage Visibility and Automation

Data miners for Storage Visibility and Automation (previously known as ASAS) work differently than data miners for either SA or NA. To mine data from an Storage Visibility and Automation system, you must:

- Create a database link and set up a scheduled Storage Visibility and Automation-specific mining job. This scheduled job moves data from the Storage Visibility and Automation source server to the BSA Essentials staging database.

- Install and configure an SA data miner for the SA server on which Storage Visibility and Automation is installed.

- Register the Storage Visibility and Automation data miner on BSA Essentials (Pre-registering a Data Miner for Storage Visibility and Automation and Oracle on page 51).

- Install the standard BSA Essentials data miner and configure it to communicate with the database on BSA Essentials. When the scheduled Storage Visibility and Automation-specific job completes, it triggers the BSA Essentials data miner to then mine data from the BSA Essentials staging database to the BSA Essentials main database instance.

> ▶ The data miner installation task uses `/opt/opsware/dataminer` as an example of a destination directory. You must install each data miner in a separate uniquely named directory.

Configure the BSA Essentials Database for the Storage Visibility and Automation Data Miner

To configure the BSA Essentials database instance for an Storage Visibility and Automation data miner, you must create an entry in the Oracle hosts file `tnsnames.ora` for the Storage Visibility and Automation source server and run a stored procedure in the Oracle database with parameters appropriate for your installation.

Create the Storage Visibility and Automation Entry in the Oracle Hosts File

To create the Storage Visibility and Automation entry in the Oracle hosts file, follow these steps:

1 Ensure that the desired Storage Visibility and Automation source system is properly installed and operational.

2 Install and configure an SA data miner for the SA server where Storage Visibility and Automation is installed.

3 Log on to the BSA Essentials database server.

4 Using a text editor, open the file `/var/opt/oracle/tnsnames.ora`.

5 In `tnsnames.ora`, add an entry for the Storage Visibility and Automation source database. For example:

```
asas1 =
```

```
(DESCRIPTION =

(ADDRESS_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST
=asashost.opsware.com)(PORT = 1521))
)

(CONNECT_DATA =

(SERVICE_NAME = truth)

)

)
```

In this example, `asas1` is the text string service name of the entry, and
`asashost.opsware.com` is the fully qualified domain name of the Storage Visibility and
Automation source server.

6   Save and exit the file `tnsnames.ora`.

Configure the Oracle Stored Procedure

To configure the Oracle stored procedure with your parameters, follow these steps:

1   Using SQL*Plus or other database tools, connect to the BSA Essentials database.

2   As the user `ASAS_RPT_USER`, run the command
`etlinterface.registerPlaformDatabase` with parameters appropriate to your
installation.

> ▶   The default password for `ASAS_RPT _USER` is `cmdb_admin`. For more information,
> see

An example set of SQL*Plus statements is as follows:

```
declare
-- Name of ASAS source database entry from tnsnames.ora
DbNetServiceName varchar2(30) := 'asas1';
-- The user name for connection to the ASAS source database
-- must match the hostname in the tnsnames.ora entry.
DbUserName varchar2(30) := 'opsware_admin';
-- The password for connection to the ASAS source database
DbPassword varchar2(30) := 'opsware_admin';
-- A description of this registered ASAS source
DbDescription varchar2(100) := 'ASAS Source 1';
-- A unique name for the Oracle database link
DbLinkName varchar2(30) := 'asas1_dblink';
-- The hostname of the ASAS source database server. This
-- must match the hostname in the tnsnames.ora entry.
DbHost varchar2(100) := 'asashost.opsware.com';
begin
etlinterface.registerPlatformDatabase( DbNetServiceName, DbUserName,
DbPassword, DbDescription, DbLinkName, DbHost );
end;
/
```

Install and Configure a Data Miner for an Storage Visibility and Automation Server

After the data miner is configured on the BSA Essentials server, you will copy data miner files and configure them on the data source machine—the BSA Essentials database server.

1 Log on to the BSA Essentials database server.

2 For a dual server installation, run the following commands to copy `dataminer.tar` from `/opt/opsware/omdb/dist` on the BSA Essentials server to the `/opt/opsware/dataminer` directory on the database server:

   a **`mkdir -p /opt/opsware/dataminer`**

   b **`cd /opt/opsware/dataminer`**

   c **`scp` <*BSA_Essentials_Core_Server*>`:/opt/opsware/omdb/dist/dataminer.tar`**

3 For a single server installation, manually create the `/opt/opsware/dataminer` directory, and then copy `dataminer.tar` from `/opt/opsware/omdb/dist` to `/opt/opsware/dataminer`.

4 Extract the contents of the `dataminer.tar` file:

   `tar -xvf dataminer.tar`

5 Run the data miner setup using the following command:

   `./dmsetup.sh`

   The following prompt appears:

   ```
   Please enter the registration token provided after this dataminer was
   configured on the OMDB server: []
   ```

6 Type the registration token that was generated on the BSA Essentials server. The following prompt appears:

   ```
   Updating token in dataminer.conf
   Would you like to have this dataminer automatically start up when the
   system reboots? y/n:
   ```

7 Type **y**, then press **ENTER**. The following prompt appears:

   ```
   Dataminer is now configured for startup:
   ```

8 To exit `dmsetup.sh`, type **y**, then press **ENTER**.

Mine Storage Visibility and Automation Data

An Oracle stored procedure on the Storage Visibility and Automation server mines Storage Visibility and Automation data from the Storage Visibility and Automation server into a staging schema in the BSA Essentials database instance. A scheduled Oracle job runs this Oracle stored procedure against the registered Storage Visibility and Automation server daily at midnight UTC.

You can run this process at other times, such as immediately after registering the Storage Visibility and Automation server. To run the Oracle stored procedure, follow these steps:

1 On the BSA Essentials database server, start SQL*Plus or other database tool.

2 Run the following command:

```
begin
dbms_scheduler.run_job(
job_name=>'asas_rpt_user.asas_Run_etl',
```

```
          use_current_session=>false
          );
          end;
          /
```

3   Start the data miner.

Listing and Unregistering Data Miners

This section shows how to list the data miners on a Solaris or Linux server, and how to unregister a data miner.

▶   This only removes the local data miner startup script and the configuration created by the `dmsetup.sh` script. It does not remove the configuration created by the `dmconfig.sh` script.

Listing Data Miners

To list the data miners on a Solaris or Linux server, perform the following steps:

1   Log on to the server that the data miner is running on, and then open a terminal window.

2   Type the following command:

```
/etc/init.d/opsware-dataminer-1 list
```

The following is an example of the kind of output from the list option:

```
The following DataMiners are registered on this machine:
DataMiner #1 token:3M2C2 location /opt/opsware/dataminer type:SAS
DataMiner #2 token:XXX123 location /opt/opsware/dataminerx type:Not yet
retrieved from OMDB Core
```

▶   The `/etc/init.d/opsware-dataminer-<n>` command (where *<n>* is determined by the number of data miners installed on the local machine) is available only if you have configured the data miner to `autostart` when the system reboots by using the `dmsetup.sh` script.

Unregistering a Data Miner

To remove the startup information for a data miner from the list of data miners running on a Solaris or Linux server, perform the following steps:

1   Perform the steps in Listing Data Miners on page 70.
    Note the token value displayed for the data miner you want to remove.

2   Change directory to the location where the data miner is installed. By default, the first data miner installed on a system is installed to `/opt/opsware/dataminer`.

3   To unregister the data miner, execute the following command:

```
./dmsetup.sh --unregister --token TOKEN
```

where *TOKEN* is the token value of the data miner you noted in step 1.

Unregistering a data miner comments out the entry for that data miner in `dataminers.conf`.

Reading the dataminers.conf File

When you run `dmsetup.sh`, it creates or updates a file
`/etc/opt/opsware/omdb/dataminers.conf` that includes information on all data miners
installed on that server. If the `dataminers.conf` file exists when you install a new data
miner, `dmsetup.sh` updates the file with the new information, and adds 1 to the
`ConfiguredDataMiners` value. When uninstalling a data miner, dmsetup.sh comments out
the specified data miner entry in `dataminers.conf`, and then decreases the
`ConfiguredDataMiners` value by 1.

Starting or Stopping a Data Miner

This section presents how to start and stop a data miner from the Solaris, Linux, or Windows
command line, and how to start and stop a data miner from the Windows graphical user
interface (GUI).

If an error message appears when the data miner is started, do not rerun the `./dmconfig.sh`
`-add` command. Instead, set the correct configuration for the data miner using the
`./dmconfig.sh -update` command. See Setting Configuration Options Using dmconfig.sh on
page 53.

Starting a Data Miner From the Solaris or Linux Command Line

To start a data miner from the Solaris or Linux command line, perform the following steps:

1   Log on to the Linux or Solaris server where the data miner is installed .

2   Change to the directory you installed the data miner.

3   Enter the following command:

    ./dataminer.sh start

4   Tail the dataminer.log to observe progress.

    tail -f /opt/opsware/dataminer/dataminer.log

    You should see the tail of the data miner log display content similar to the following
    example:

    ```
    INFO - - - - - "Configuration Path = /opt/opsware/dataminer"
    INFO - - - - - "Using configuration file
    /opt/opsware/dataminer/dataminer.conf"
    INFO - - - - - "Initializing..."
    INFO - - - - - "Running on Linux"
    INFO - - - - - "Cached Configuration file has been updated, reloading"
    INFO - - - - - "Boot certificate not found Attempt to import"
    INFO - - - - - "Boot certificate successfully imported"
    INFO - - - - - "DataMiner successfully registered"
    ```

5   When you are satisfied that the data miner is correctly configured and collecting data, you
    can stop the tail command.

Stopping a Data Miner From the Solaris or Linux Command Line

To stop a data miner from the Solaris or Linux command line, perform the following steps:

1   Log on to the server that the data miner is running on, and then open a terminal window.

2   Perform the steps in Listing and Unregistering Data Miners on page 70 to list the data miners on the server.

3   Identify the data miner you want to stop by reading the list output, and note the number of that data miner.

4   Type the following command:

    `/etc/init.d/opsware-dataminer-`*`number`*` stop`

    where *number* is the number you identified in the list.

5   To stop all of the data miners on a server, repeat the previous step for all data miner numbers shown in the list output.

Starting a Data Miner From The Windows Command Line

To start a data miner from the Windows command line, perform the following steps:

1   Open a Windows command prompt.

2   Change directory to `C:\dataminer`.

3   To start the service, run the following command:

    `DataMinerService -start`

Stopping a Data Miner From The Windows Command Line

To stop a data miner from the Windows command line, perform the following steps:

1   Open a Windows command prompt.

2   Change directory to `C:\dataminer`.

3   To stop the service, run the following command:

    `DataMinerService -stop`

Starting a Data Miner From The Windows GUI

To start a data miner from the Windows GUI, perform the following steps:

1   Using **Administrative Tools** in the Windows Control Panel, select **Services.**

2   Right-click on **HP BSAE DataMiner**.

3   Select **Start**.

Stopping a Data Miner From The Windows GUI

To stop a data miner from the Windows GUI, perform the following steps:

1   Using **Administrative Tools** in the Windows Control Panel, select **Services.**

2   Right-click on **HP BSAE DataMiner**.

3   Select **Stop**.

Uninstalling Data Miners and Transaction Mining Triggers

This section describes how to uninstall data miners and Transaction Mining Triggers. When uninstalling data miners on NA or OO, first uninstall the data miner, then uninstall the Transaction Mining Trigger.

Uninstalling an SA or Storage Visibility and Automation Data Miner on Linux or Solaris

To uninstall an SA or Storage Visibility and Automation data miner on Linux or Solaris, perform the following steps:

1   Complete the steps in Unregistering a Data Miner on page 70.

2   Delete the directory where you installed the data miner.

Uninstalling an NA Data Miner on Linux or Solaris

To uninstall an NA data miner on Linux or Solaris, perform the following steps:

1   Complete the steps in Unregistering a Data Miner on page 70.

2   Complete the steps in Uninstalling Transaction Mining Triggers for NA with Oracle on Linux or Solaris on page 74.

3   Delete the directory where you installed the data miner.

Uninstalling an OO Data Miner on Linux

To uninstall an OO data miner on Linux, perform the following steps:

1   Complete the steps in Unregistering a Data Miner on page 70.

2   Complete the steps in Uninstalling Transaction Mining Triggers for OO with Oracle on Linux on page 76.

3   Delete the directory where you installed the data miner.

Uninstalling an NA Data Miner Service on Windows

To uninstall an NA data miner service on Windows, perform the following steps:

1   Open a Windows command prompt.

2   Change directory to `C:\dataminer`.

3   To stop the service, run the following command:

    `DataMinerService -stop`

4   To uninstall the service, run the following command:

    `DataMinerService -remove`

5   Perform one of the following two actions:

    - Complete the steps in Uninstalling Transaction Mining Triggers for NA with Oracle on Windows on page 75.

        Or

    - Complete the steps in Uninstalling Transaction Mining Triggers for NA with SQL Server on Windows on page 75.

Uninstalling an OO Data Miner Service on Windows

To uninstall an OO data miner service on Windows, perform the following steps:

1   Open a Windows command prompt.

2   Change directory to `C:\dataminer`.

3   To stop the service, run the following command:

    `DataMinerService -stop`

4   To uninstall the service, run the following command:

    `DataMinerService -remove`

5   Complete the steps in Uninstalling Transaction Mining Triggers for OO with SQL Server on Windows on page 76.

Uninstalling Transaction Mining Triggers for NA with Oracle on Linux or Solaris

This section describes how to uninstall transaction mining triggers for a NA installation on a Linux or Solaris server using Oracle.

You will need the following information before you begin:

- The Oracle SID of the NA database instance

To uninstall transaction mining triggers on an NA with Oracle on Linux or Solaris server, perform the following steps:

1   Stop the NA application.

➤   You do not need to stop the NA Oracle instance to uninstall the Transaction Mining Trigger.

2   Stop the data miner associated with the Transaction Mining Trigger.

3   On the NA server, log in as the user `oracle`.

4   Type the following command:

    `cd /opt/opsware/dataminer/triggers/oracle`

5   Type the following command:

```
./undeploy_triggers.sh
```

6   Respond to all prompts.

7   Restart the NA application.

Uninstalling Transaction Mining Triggers for NA with Oracle on Windows

This section describes how to uninstall transaction mining triggers for a NA installation on a Windows server using Oracle.

You will need the following information before you begin:

*   The Oracle SID of the NA database instance

To uninstall transaction mining triggers on an NA and Oracle on Windows server, perform the following steps:

1   Stop the NA application.

▶   You do not need to stop the NA Oracle instance to uninstall the Transaction Mining Trigger.

2   Stop the data miner associated with the Transaction Mining Trigger.

3   Log on to the NA database server as a user that is a member of the `ORA_DBA` group.

4   In the `C:\dataminer\triggers\oracle` directory, run the following command:

```
undeploy_triggers.cmd
```

5   Respond to all prompts.

6   Restart the NA application.

Uninstalling Transaction Mining Triggers for NA with SQL Server on Windows

This section describes how to uninstall transaction mining triggers for a NA installation on a Windows server using SQL Server.

You will need the following information before you begin:

*   The name of the NA application schema

To find this name, perform the steps in Preparing to Install Transaction Mining Triggers for NA with SQL Server on Windows on page 61.

To uninstall transaction mining triggers on an NA and SQL Server Windows server, perform the following steps:

1   Stop the NA application.

▶   You do not need to stop the NA SQL Server instance to uninstall the Transaction Mining Trigger.

2   Stop the data miner associated with the Transaction Mining Trigger.

3   In the `C:\dataminer\triggers\sqlserver` directory, run the following command:

```
undeploy_triggers.cmd
```

4   The following prompt appears:

```
Undeployment will remove all OMDB triggers for registered tables as well as
the transaction data and supporting procedures. Continue? [N]
```

5   Type y, and then press Enter. The following prompt appears:

    `Which SQL Server instance contains the OMDB source database?`

6   Type the name of the SQL Server instance. For example, type `SQLExpress` to select SQL Server Express.

7   The following prompt appears:

    `Which SQL Server database contains the application schema with the triggers?`

8   Type the value of the NA 'Database catalog' you wrote down in Preparing to Install Transaction Mining Triggers for NA with SQL Server on Windows on page 61, and then press Enter.

9   Restart the NA application.

Uninstalling Transaction Mining Triggers for OO with Oracle on Linux

This section describes how to uninstall transaction mining triggers for an OO installation on a Linux server using Oracle.

You will need the following information before you begin:

•   The Oracle SID of the OO database instance

To uninstall transaction mining triggers on an OO and Oracle Linux server, perform the following steps:

1   Stop the OO application.

    ▶   Do not stop the OO Oracle instance to uninstall the Transaction Mining Trigger.

2   Stop the data miner associated with the Transaction Mining Trigger.

3   On the OO server, log in as the user `oracle`.

4   Type the following command:

    `cd /opt/opsware/dataminer/triggers/oracle`

5   Type the following command:

    `./undeploy_triggers.sh`

6   The following prompt appears:

    `Undeployment will remove all OMDB triggers for registered tables as well as the transaction data and supporting procedures. Continue? [N]`

7   Type y, and then press Enter. The following prompt appears:

    `What is the desired Oracle SID?`

8   Type the Oracle SID of the OO database instance, and then press Enter.

9   Restart the OO application.

Uninstalling Transaction Mining Triggers for OO with SQL Server on Windows

This section describes how to uninstall transaction mining triggers for an OO installation on a Windows server using SQL Server.

You will need the following information before you begin:

- The name of the OO application schema

To uninstall transaction mining triggers on an OO and SQL Server Windows server, perform the following steps:

1 Stop the OO application.

> Do not stop the OO SQL Server instance to uninstall the Transaction Mining Trigger.

2 Stop the data miner associated with the Transaction Mining Trigger.

3 In the `C:\dataminer\triggers\sqlserver` directory, run the following command:

`undeploy_triggers.cmd`

4 The following prompt appears:

`Undeployment will remove all OMDB triggers for registered tables as well as the transaction data and supporting procedures. Continue? [N]`

5 Type y, and then press Enter. The following prompt appears:

`Which SQL Server instance contains the OMDB source database?`

6 Type the name of the SQL Server instance. For example, type `SQLExpress` to select SQL Server Express.

7 The following prompt appears:

`Which SQL Server database contains the application schema with the triggers?`

8 Type the value of the OO 'Database catalog', and then press Enter.

9 Restart the OO application.

6 Upgrading BSA Essentials

You can upgrade from BSA Essentials 2.01 to 9.10 using the instructions in this chapter. During the upgrade process, all of your core platform files are backed up in case there is a need for restoration.

- If you are upgrading to BSA Essentials 9.10 from a 2.01 installation, the upgrade is not customer self-installable. All production BSA Essentials upgrade deployments must be installed by an HP Professional Services team or certified consultant to be eligible for official HP support. This caveat does not apply to new customers installing 9.10 for the first time. A new 9.10 install of BSA Essentials is fully customer self-installable.

- It is recommended that you take a complete backup of the system before upgrading to BSA Essentials 9.10.

You should test the upgrade in a test environment before you perform the upgrade on your production servers. Set up the BSA Essentials test core to exactly match your production core, including any customizations or custom reports. The test core can use a full database dump from your production database. After you test the upgrade, you should verify that all custom reports are correct and working as expected.

Prerequisites for Upgrading

The following items are required before you upgrade to BSA Essentials:

- You must be upgrading from BSA Essentials 2.01.

- Before upgrading to 9.10, make sure that all the active hotfixes for BSA Essentials 2.01 (for all functions) are installed. For details of available hotfixes, contact HP Support.

- The Oracle database software installed must be a supported version for BSA Essentials 9.10. For a list of supported databases, see the *BSA Essentials 9.10 Platform Support* document included in the `docs` directory on the distribution media for this product.

- The Oracle database server must be running.

- The BSA Essentials Core Server (9.10) cannot coexist with SA. Before upgrading to BSA Essentials 9.10, make sure SA is not installed on the BSA Essentials Core Server. However, the BSA Essentials Core Server can exist on a system where the SA agent or SA database is installed.

- Ensure that you have enough disk space in `/opt/opsware` to allow for the backup of the existing installation. You can determine the amount of disk space you have by executing the disk usage command in the `opsware` directories as follows:

```
# du -sk /etc/opt/opsware /opt/opsware /var/opt/opsware
```

Upgrading the Installation

The following section explains how to upgrade an existing BSA Essentials 2.01 installation to 9.10.

▶ Be aware that the core backup and core install are very time consuming steps in the upgrade procedure.

To upgrade the BSA Essentials Core Server, complete the following steps:

1 Log on as root on the server where you want to upgrade BSA Essentials.

2 Mount the BSA Essentials upgrade media.

3 Start the BSA Essentials installer using the following command:

    /<mnt_point>/install.bin

4 Click **Next** to begin the upgrade.

5 Accept the license agreement.

   ▶ If your Core Server does not meet the prerequisites, an error message will be displayed and the upgrade process will exit once you close the message.

6 Click **Install**. If your server has the correct prerequisites, the installing panel is displayed while the existing BSA Essentials is backed up and upgraded.

   ▶ While upgrading BSA Essentials, the installer deletes the unencrypted passwords from the datasource XML files under the /opt/opsware/omdb/deploy directory and places them in an encrypted format into the /opt/opsware/omdb/omdb/conf/login-config.xml file.

If the installer passes prerequisites and installation continues, BSA Essentials services will be stopped. During this time the data miner will be unable to connect and display relevant messages. Once upgrade has completed and the core services have been restarted, the data miner will start printing "This version is not compatible with the server *<bsaeservername>*" and "Data mining tasks will be suspended". Proceed to Upgrading Data Miners.

▶ If an error occurs during the upgrade process, an error message will be displayed, and the server will revert back to its original install state once you close the message.

An upgrade complete panel is displayed when the process finishes successfully.

Upgrading Data Miners

This section describes how to upgrade the data miners associated with the BSA Essentials Core Server. You must upgrade the BSA Essentials Core server before upgrading the data miners associated with that BSA Essentials Core server. The data miner installation task typically uses /opt/opsware/dataminer and C:\dataminer as examples of a destination directory. However, when following the procedures in this section, use the directory in which the data miner you are upgrading is installed instead of /opt/opsware/dataminer.

Preserving Data Miner Customizations

If you have made any customizations to the settings in the file that is used to start or configure the data miner, you must make note of these settings, and compare them with the ones in the startup or properties file on your system after you upgrade your data miner.

On a Linux or Solaris system, the startup file to examine is the `dataminer.sh` file. On a Windows system, the properties file to inspect is the `jvm.properties` file. If the values for your customized settings have changed and are no longer optimum for your purposes, you must edit these values before starting the data miner.

Common settings to change are `-Xms<size>`, which sets the initial Java heap size and `-Xmx<size>`, which sets the maximum Java heap size. If you have customized these values, ensure that they are properly set before starting the data miner after upgrading.

Upgrading a Data Miner on a Linux or Solaris Server

To upgrade a data miner on a Linux or Solaris server, follow these steps:

1 Log on to the Linux or Solaris server where the data miner is installed.

2 Stop the data miner by performing the steps in Stopping a Data Miner From the Solaris or Linux Command Line on page 71.

3 For the data miner for SA, follow these steps to make sure that the latest versions of the `valt.jar` and OCC Client jar files are present on the data miner system (skip this step if you continue to use the same version of SA that was installed with BSA Essentials 2.01):

> For other data miners, skip to step 4.

a If the Model Repository Multimaster Component is installed on the system, skip to step b.

If the Model Repository Multimaster Component is *not* installed on the system, manually copy the `vault.jar` file from a system where the Model Repository Multimaster Component is installed to the system where you want to upgrade the data miner:

— **mkdir -p /opt/opsware/vault/bin**

— **cd /opt/opsware/vault/bin**

— **scp** *<SA_Model_Repository_Multimaster_Component>***:/opt/opsware/vault/bin/vault.jar.**

In this instance, *<SA_Model_Repository_Multimaster_Component>* is the fully qualified domain name of the system where the Model Repository Multimaster Component is installed.

b Run the following commands to copy the OCC Client jar files to the SA system from the system where the Command Center component is installed:

> Skip this step if the Command Center component is already installed on this system.

— **mkdir -p /opt/opsware/occ/occ/lib**

— **cd /opt/opsware/occ/occ/lib**

— **scp** *<SA_Command_Center>***:/opt/opsware/occ/occ/lib/mail.jar.**

— **mkdir -p /opt/opsware/occclient**

— **cd /opt/opsware/occclient**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/wlclient.jar.**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/jsch-latest.jar.**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/json.jar.**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/opsware_rmi.jar.**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/
spoke_client.jar.**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/twistclient.jar.**

— **scp** *<SA_Command_Center>***:/opt/opsware/occclient/cfl.jar.**

In this instance, *<SA_Command_Center>* is the fully qualified domain name of the system where the SA Command Center component is installed.

4   Copy `dataminer-upgrade.tar` from `/opt/opsware/omdb/dist` on the BSA Essentials server to the installed data miner directory, typically `/opt/opsware/dataminer`. The commands used for this step are shown in the following example:

```
cd /opt/opsware/dataminer
scp <BSA_Essentials_Server>:/opt/opsware/omdb/dist/dataminer-upgrade.tar .
```

5   Untar the file:

```
tar -xvf dataminer-upgrade.tar
```

6   Start the data miner by performing the steps in Starting or Stopping a Data Miner on page 71.

Upgrading a Data Miner on a Windows Server

To upgrade a data miner on a Windows server, perform the following steps:

1   Log on to the Windows server where the data miner is installed.

2   To stop the data miner service, change directory to the installation directory where data miner is installed, typically `C:\dataminer`, and run the following command:

```
DataMinerService -stop
```

3   To remove the data miner service, run the following command:

```
DataMinerService -remove
```

4   Copy `dataminer-upgrade.zip` from `/opt/opsware/omdb/dist` on the BSA Essentials server to data miner installation directory.

5   Unzip the file.

6   To install the dataminer service, run the following command:

```
DataMinerService -install
```

7   Start the data miner by performing the steps in Starting or Stopping a Data Miner on page 71.

Upgrading Live Content

Perform this task after a BSA Essentials upgrade to allow the live content via HP Live Network connector (LNc) to self upgrade. This task assumes that the server being upgraded has an existing LNc installation. If that is not the case, see *Setting Up Live Content Downloads* in the *BSA Essentials Administrator Guide* for more information on how to configure LNc for the first time.

1   As root, run the LNc application for it to self upgrade to the latest version by executing the following command:

    `/<lnc_install_location>/lnc/bin/live-network-connector`

2   Verify that the LNc version is at least 3.1 by executing the following command:

    `/<lnc_install_location>/lnc/bin/live-network-connector --version`

3   Verify that the correct content streams are still enabled in the LNc configuration file by executing the following command:

    `/<lnc_install_location>/lnc/bin/live-network-connector read-config`

▶   To set or to confirm current content subscriptions, refer to the *HP Live Network connector Installation and Configuration Guide*.

7 Uninstalling BSA Essentials

Overview

This chapter describes how to uninstall the BSA Essentials Core Server and database instance.

To uninstall BSA Essentials, perform the following steps:

- Stopping and Unregistering Data Miners
- Uninstalling the BSA Essentials Core Server
- Removing the BSA Essentials Database Instance

Stopping and Unregistering Data Miners

You should stop and unregister data miners before you uninstall the Core Server.

To stop and unregister data miners on Linux or Solaris, perform the following steps:

1   Log on as root on the BSA Essentials Core Server.

2   To determine what data sources are configured, change directories to:

    # /opt/opsware/omdb/bin

3   Run the following command:

    # ./dmconfig.sh --list

4   For each data source listed, log in as root on the data miner installation location and stop and unregister the data miner by executing the following commands:

    # ./dataminer.sh stop

    # ./dmsetup.sh --unregister

5   Delete the contents of the Data Miner directory.

6   Verify that there are no stray data miner process in memory by executing the following command for Linux:

    # ps -aef | grep dataminer

    or execute the following command for Solaris:

    # /usr/ucb/ps -auxww | grep dataminer

To stop and unregister data miners on Windows, perform the following steps:

1   In the Start Menu, click Run.

2   Type cmd to open a command window.

3 Change to the directory where you installed the data miner.

4 Stop the data miner service:

   `dataminerservice -stop`

5 Remove the data miner service:

   `dataminerservice -remove`

6 Remove the directory.

Uninstalling the BSA Essentials Core Server

When you uninstall the Core Server, all BSA Essentials files and directories are removed unless you have another BSA product installed on this server. If you have another BSA product installed, then any files that are required for that product will not be removed.

To uninstall the Core Server, complete the following steps:

1 Log on to the BSA Essentials Core Server as root.

2 Start the uninstallation program:

   `# /opt/HP/BSAE/Uninstall/Uninstall_BSA_Essentials`

3 Click **Next** to begin the uninstall.

4 Click **Uninstall** to continue.

   When the uninstallation process is complete, you will see a message that tells you to clean up the database. You must remove BSA Essentials database components before you can reinstall the product using the existing SID.

   The uninstallation log file (`uninstall.log`) is available at `/var/log/HP/BSAE`.

Removing the BSA Essentials Database Instance

To remove the database instance with the help of the Oracle administration tool of your choice, follow these steps:

1 Log on to the server where you created the database instance.

2 Drop the following users:

   CMDB_META

   CMDB_DATA

   CMDB_CUSTOM

   CMDB_REPORTER

   CMDB_APPL

   CMDB_DEPLOYER

   BO_ADMIN

   CMDB_ADMIN

3 Drop the following tablespaces, including contents and datafiles:

BO_ADMIN

CMDB_AAA

CMDB_META

CMDB_DATA

CMDB_CUSTOM

ASAS_RPT_DATA

4   Drop the following roles:

SELECT_ASAS_RPT_USER

SELECT_CMDB_AAA

SELECT_CMDB_DATA

SELECT_CMDB_META

EDIT_ASAS_RPT_USER

EDIT_CMDB_AAA

EDIT_CMDB_DATA

EDIT_CMDB_META

BO_ADMIN_ROLE

CMDB_ADMIN_ROLE

5   Drop the BSA Essentials database.

6   Remove the Oracle admin directory. You provided the location for this directory to the installation when you created the database instance.

7   Remove the following directories:

`/u01/app/oracle/admin/cmdb`

`/<data_directory_1>/oradata/cmdb`

`/<data_directory_2>/oradata/cmdb`

`/<data_directory_3>/oradata/cmdb`

`/<data_directory_4>/oradata/cmdb`

where `<data_directory_1>`, `<data_directory_2>`, `<data_directory_3>`, and `<data_directory_4>` are the data directory names you supplied to the installation when you created the database instance.

After you remove the database, you can remove the `omdb` user and group from the server.

8 Suggested Next Steps

Now that you have completed the BSA Essentials installation, you should refer to the *BSA Essentials Administrator Guide* for more information about the following tasks:

- **Set up Live Network Connector (LNc)**. This service automatically downloads and imports new content from a HP content distribution server to your BSA Essentials server. The content that is updated includes the following:

  — BusinessObjects reports

  — Legacy BIRT reports

  — Data miner ETL/Model updates

  — BusinessObjects Universe updates

- **Install and configure the BSA Essentials Monitoring Tools**. The tool is a set of scripts that monitor the Core Server, database, and data miners and provide notification if problems occur.

- **Configure the reporting mail server**. You can configure BSA Essentials reporting to email you information such as report results.

- **Create users and groups**. When you first install BSA Essentials, an admin user is created who has the credentials to log in and set up user and group accounts. Before people can start using the product, the admin user must create user groups, add users to the groups, and then apply permissions to the groups. Group permissions control all user actions and access to viewing data in reports.

We appreciate your feedback!

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