BSA Essentials 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 2.0 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 Sever, Dual Server, and Customer-Oracle 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
- BSA Essentials Dataminer

Table 3 BSA Essentials Core Services

BSA Essentials Core Services	A set of processes responsible for the following operations: 1 Loading of data into the BSA Essentials database which has been delivered by the BSA Essentials dataminer component. 2 Displaying the BSA Essentials Web Client user interface, receiving user requests, report scheduling, report execution, and display of report results to users. The processes which constitute the BSA Essentials core services component include legacy HP SAR components and an embedded version of BusinessObjects.	The BSA Essentials core services component reside on a separate physical system from that hosting the source application(s) 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.

Table 4 BSA Essentials Database Component

BSA Essentials Database	An Oracle database which hosts transformed source application data used for reporting purposes.	The location of the BSAE database depends on the selected BSAE deployment model: • Single-server deployment: BSA Essentials database resides on the same physical host as the BSA Essentials core services components. • Dual-server deployment: BSA Essentials database resides on a separate physical host from the BSA Essentials core services components. In the dual-server deployment model the BSA Essentials database can co-exist with the HP Server Automation (SA) or HP Network Automation (NA) databases.

Table 5 BSA Essentials Dataminer

BSA Essentials Dataminer	A process 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 2.0 include: HP SA, HP NA, HP Storage and Visibility Automation (ASAS), and HP Operations Orchestration (OO)	Varies by source system. In the case of SA, it runs on the infrastructure host (the core).

Deployment Sizing Categories — Small, Medium, Large

The following table defines BSA Essentials 2.0 deployments as either small, medium, or large.

Table 6 BSA Essentials 2.0 Deployment Sizing Categories

	Server Automation Managed Servers/ Devices	Network Automation Managed Devices
Small	~ 1000	< 10,000
Medium	~ 5000	> 10,000
Large	> 10000	NA

Sizing Units

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

Recommended Sizing for BSA Essentials Components

Table 7 describes sizing suggestions for deploying the BSA Essentials core services components, which includes both the BSA Essentials Core and BusinessObjects component.

Table 7 Recommended Sizing — BSA Essentials Core Services

	CPU	RAM	Disk Space
Small	4	8 GB	40 GB
Medium	4	16 GB	40 GB
Large	8	16 GB	40 GB

Table 8 describes sizing suggestions for deploying the BSA Essentials database component.

Table 8 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.

Table 9 describes sizing suggestions for deploying the BSA Essentials data miner.

Table 9 Recommended Sizing — BSA Essentials Dataminer

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

Sizing Single Sever, Dual Server, and Customer-Oracle Deployments

BSA Essentials 2.0 supports the following different deployment options:

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

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 of different servers. In other words, these sizing suggestions should be considered "additive."

For example, if you wanted to install both the BSA Essentials core and database components 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
- 65 GB disc space (40 GB from BSA Essentials core services component + 25 GB from the BSA Essentials Database table = 65)

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

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 10 Example Database Disk Sizing Calculations

Devices	Total Years	First Year	Additional Years	Total Disk Space (GB)
3000	1	30 GB	0	30
5000	5	50	100	270
10,000	4	100	150	415

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

Directory Sizing

Table 11 suggests database directory sizing for small, medium, and large BSA Essentials deployments.

Table 11 BSA Essentials Directory Sizing

BSA Essentials Directory	Small	Medium	Large	Usage
/etc/opt/opsware	10 MB	10 MB	10 MB	Configuration information for BSA Essentials services
/opt/opsware	32 GB	32 GB	32 GB	Base directory for BSA Essentials

Table 11 BSA Essentials Directory Sizing

BSA Essentials Directory	Small	Medium	Large	Usage
/var/log/opsware	4 GB	8 GB	16 GB	Run space used by BSA Essentials deployer service
/u01, /u02, /u03, /u04	See Database Sizing Estimate — SA and NA.	See Database Sizing Estimate — SA and NA.	See Database Sizing Estimate — SA and NA.	Oracle application and data files
Totals	**36 GB plus database size estimate**	**40 GB plus database size estimate**	**48 GB plus database size estimate**	

Tablespace Usage and Sizing

Table 12 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

Table 12 BSA Essentials Database Tablespace Usage

BSA Essentials Database Tablespace Name	Usage	Small, Medium, or Large
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
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 ad Automation) data if there is a ASAS dataminer 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 10 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.