

# IT Administrators Guide for Vasont Installation, Configuration, and Maintenance

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## Disclaimer

The instructions contained within this document serve merely as a reference for guidance purposes only. Therefore, Vasont Systems does not assume any liability or responsibility related to any Oracle installation issues, or for the consequences of any actions taken on the basis of the information provided herein, unless Vasont Systems has been contracted by your organization to do so. Procedures and examples contained within this document may vary depending upon both your version of Oracle and operating system. For information pertaining to other operating systems, as well as other installation issues, refer to your specific Oracle documentation.

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# Creating a New Vasont Schema from an Oracle Export

## Overview

The purpose of this section is to explain the process necessary to install a Vasont Database Schema, based on an Oracle Export (“dump”) provided by Vasont Systems or obtained from another Vasont installation at your facilities, into an Oracle Instance. Typically, this action is taken when Vasont Systems is providing the initial Vasont Database Schema for new clients or when a second Vasont Database Schema is being brought on-line for testing or “sandbox” purposes (e.g., to prototype changes to the content model without affecting a Production Database).

The installation of a Vasont Schema entails several steps, including creating the Vasont Schema “owner” with appropriate privileges, importing the Oracle Export file and taking specific actions required when using advanced Vasont features, such as Oracle Text indexes. This document provides detailed, step-by-step instructions for completing all of these tasks.

The steps in this document frequently refer to the Oracle Enterprise Manager (OEM). If you currently do not have Oracle Enterprise Manager available, you may want to consider installing it on the Oracle Server – Oracle Enterprise Manager provides a graphical user interface (GUI) for accomplishing common Oracle Administration tasks, simplifying the Oracle Database Administrator’s (DBA’s) job.



The SQLPLUS command will also be shown if your DBA desires to use SQL to configure the Vasont schema in an Oracle instance.



If you are updating or refreshing an existing Vasont Schema (rather than installing the Vasont Schema into an Oracle Instance where Vasont does not exist) please refer to section “Refreshing Your Vasont Schema from an Oracle Export” on page 25.

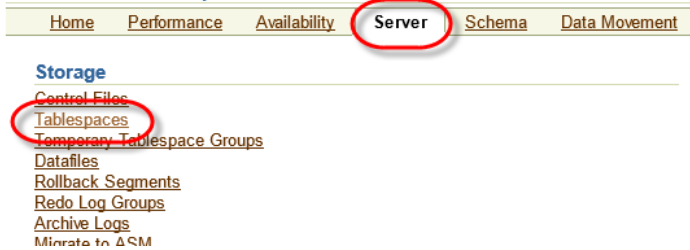
## Creating the Vasont Tablespace

The Vasont Database Schema will be physically stored in a dedicated Oracle tablespace. You will need the tablespace name(s), and corresponding size(s), from the Vasont Database Schema “source” during this process. If the Vasont Database Schema was provided by Vasont Systems, this information will be included with the delivery. If you are installing a copy of an existing Vasont Schema at your facilities (e.g., for testing purposes or to establish a “sandbox”), the tablespace(s) information should be obtained from the Oracle Instance housing the source Schema.

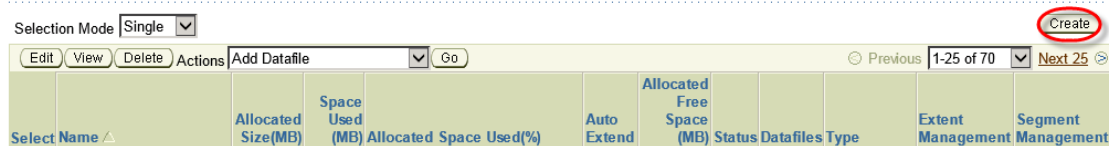
To create the Oracle tablespace(s) necessary for storage of the Vasont Database Schema:

1. Start the Oracle Enterprise Manager Console, and connect using the Oracle SYS account as SYSDBA.

- On the tabs towards the top of the page, select "Server". Under the Storage menu, below the tabs, select "Tablespaces" – The Tablespaces OEM page will appear.



- Select "Create", located on the far right of the tablespaces page just above the list. The Add Tablespace page will appear.



- Fill in the required fields under the General tab:

Name: The name for the new tablespace that will be used with the Vasont Schema.

Extent Management: Locally Managed

Type: Permanent

Status: Read/Write

Database Instance: produ.vasont.com > Tablespaces >

Logged in As SYS

Create Tablespace

General Storage

Name: VASONT\_TS

Extent Management: ☒ Locally Managed ☐ Dictionary Managed

Type: ☒ Permanent ☐ Temporary

Status: ☒ Read Write ☐ Read Only ☐ Offline

Undo Retention Guarantee: ☐ Yes ☒ No

- In the Datafiles section towards the bottom on the General tab page, select "add" – The Add Data file page will appear.

Datafiles

☐ Use bigfile tablespace  
Tablespace can have only one datafile with no practical size limit.

Select Name Directory Size (MB)

No items found

General Storage

6. In the Add Datafile page, enter the following information.

**File Name:** The actual filename (including the extension) of the Oracle datafile. In this case we are going to be using VASONT\_TS.ORA

**File Directory:** This will usually be populated to your oradata home directory OR you can specify a different location.

**File Size:** The size for the new tablespace (specify M Bytes or K Bytes using the drop down). The initial size of your schema database is provided to you by Vasont Systems.

**Automatically extend data file when full (AUTOEXTEND):** Check to enable the autoextend feature. Oracle provides a feature to automatically enlarge a tablespace when there is inadequate space available to complete a database operation, such as the addition of new content. By using this feature, you can avoid the potential interruption of Vasont processes when tablespace growth is required.

**Increment:** The size to use when extending (specify M Bytes or K Bytes using the drop down) – A size anywhere from 50 M Bytes to 100 M Bytes is typically adequate.

**Maximum File Size:** To "cap" the size for the tablespace, select the Value radio button and enter a maximum size for the tablespace (specify M Bytes or K Bytes using the drop down) – Enforce a cap, using this value, if the disk space on your Oracle Server is constrained. Otherwise, the Unlimited value can be used.

Click the "Continue" button to close the Add Datafile Page.

Database Instance: [produ.vasont.com](#) > [Tablespaces](#) > Logged in As SYS

### Add Datafile

\* File Name

\* File Directory

Tablespace **VASONT\_TS**

File Size  MB

☐ Reuse Existing File

**Storage**

☒ Automatically extend datafile when full (AUTOEXTEND)

Increment  MB

Maximum File Size ☒ Unlimited

☐ Value  MB


☒ TIP Changes made on this page will NOT take effect until you click "OK" button on the Tablespace page.

[Database](#) | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)


7. Select the "OK" button in the upper right to create the new tablespace. This may take some time (up to 30 minutes) depending on the tablespace size specified and Oracle Server hardware configuration – A “Tablespace created successfully” message will appear once the tablespace has been created.

Repeat steps 2 through 7 if an additional tablespace is required for the Vasont Database Schema.

Leave the Oracle Enterprise Manager running and logged in with the SYS account – It will be used for additional steps in the Schema installation process.



### SQL PLUS - Creating the Vasont Tablespace



This SQLPLUS example shows the creation of a tablespace named "VASONT\_TS". The initial size will be 1000 MB. It will autoextend its size by 100 MB up to the maximum size allowed by your O/S. The actual data file name itself is determined as well. Steps 2 through 7 from above can all be completed using one SQL statement logged in as SYS:

```
SQL> CREATE SMALLFILE TABLESPACE "VASONT_TS" DATAFILE
'O:\APP\ADMINISTRATOR\ORADATA\PRODU\VASONT_TS.ORA' SIZE 1000M AUTOEXTEND
ON NEXT 100M MAXSIZE UNLIMITED LOGGING EXTENT MANAGEMENT LOCAL SEGMENT
SPACE MANAGEMENT AUTO;
```

## Creating Vasont Users' Role

Individual Vasont users will be associated with the Vasont Database Schema, and granted access to the Vasont data and objects, via an Oracle Role. The use of a Role streamlines the Vasont user creation process and simplifies the future maintenance of the grants and privileges required for Vasont access.

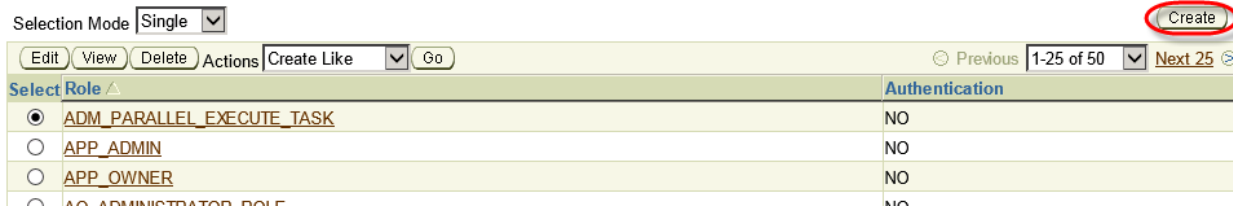
1. On the tabs towards the top of the page, select "Server". Under the Security menu, below the tabs, select "Roles" – The Roles OEM page will appear.



The screenshot shows the Oracle Enterprise Manager interface. At the top, there are tabs: **Server**, Schema, Data Movement, and Software and Support. The **Server** tab is selected and circled in red. Below the tabs, there are two main sections: **Database Configuration** and **Oracle Scheduler**. Under **Database Configuration**, there are links for Memory Advisors, Automatic Undo Management, Initialization Parameters, and View Database Feature Usage. Under **Oracle Scheduler**, there are links for Jobs, Chains, Schedules, Programs, Job Classes, Windows, Window Groups, Global Attributes, and Automated Maintenance Tasks. Below these, there are two more sections: **Resource Manager** and **Security**. Under **Resource Manager**, there are links for Getting Started, Consumer Groups, Consumer Group Mappings, and Plans. Under **Security**, there are links for Users, Roles, Profiles, and Audit Settings. The **Roles** link is circled in red.



- Select "Create", located on the far right of the User Roles page just above the list. The Add User Role page will appear



Selection Mode Single

Edit View Delete Actions Create Like Go Previous 1-25 of 50 Next 25

Select Role	Authentication
<input checked="" type="radio"/> <a href="#">ADM_PARALLEL_EXECUTE_TASK</a>	NO
<input type="radio"/> <a href="#">APP_ADMIN</a>	NO
<input type="radio"/> <a href="#">APP_OWNER</a>	NO
<input type="radio"/> <a href="#">SYS_ADMINISTRATOR_ROLE</a>	NO

- On the Create Role page, enter the following information.

**Name:** VASONT\_USER\_ROLE

**Authentication:** None (Default)

No need to worry about any of the other settings here such as the roles, system privileges, etc. These will be applied at a later time. Only the Name field is required.

Database Instance: [produ.vasont.com](#) > [Roles](#) > Logged in As SYS

**Create Role**

Show SQL Cancel OK

General	Roles	System Privileges	Object Privileges	Consumer Group Privileges
<p>* Name <input type="text" value="VASONT_USER_ROLE"/></p> <p>Authentication <span>None</span> <span>▼</span></p> <p>There is no authentication.</p>				

Show SQL Cancel OK

Leave the *Oracle Enterprise Manager Console* running and logged in with the SYS account – It will be used for additional steps in the Schema installation process.



### SQL PLUS - Creating the Vasont Users' Role



This SQLPLUS example shows the creation of the Vasont Users' Role "VASONT\_USER\_ROLE". Steps 1 through 3 from above can all be completed using one SQL statement logged in as SYS:

```
SQL> CREATE ROLE "VASONT_USER_ROLE";
```

## Creating Vasont Users' Oracle Accounts

The individual Vasont user Oracle accounts can be established at any time before or after the installation of the Vasont Database Schema. Instructions are provided here, however, since the *Oracle Enterprise Manager* is already in use and to help streamline and simplify the installation process.

1. On the tabs towards the top of the page, select "Server". Under the Security menu, below the tabs, select "Users" – The Users OEM page will appear.



2. Select "Create", located on the far right of the Users page just above the list. The Add User page will appear



3. On the "General" tab, enter the required information in the noted fields:

**Name:** The Oracle user account name to be assigned to the Vasont user.

**Profile:** DEFAULT

**Authentication:** Default - Password

**Enter Password:** The password to use for the Vasont user's account.

**Confirm Password:** Re-enter the password for the Vasont user's account.

**Default Tablespace:** The tablespace, created in the Creating the Vasont Tablespace(s) section above, that will be used to contain the Vasont Database Schema. If separate tablespaces are created for the Vasont data and indexes, specify the data tablespace here.

**Temporary Tablespace:** TEMP

**Status:** Default - Unlocked Radio selected

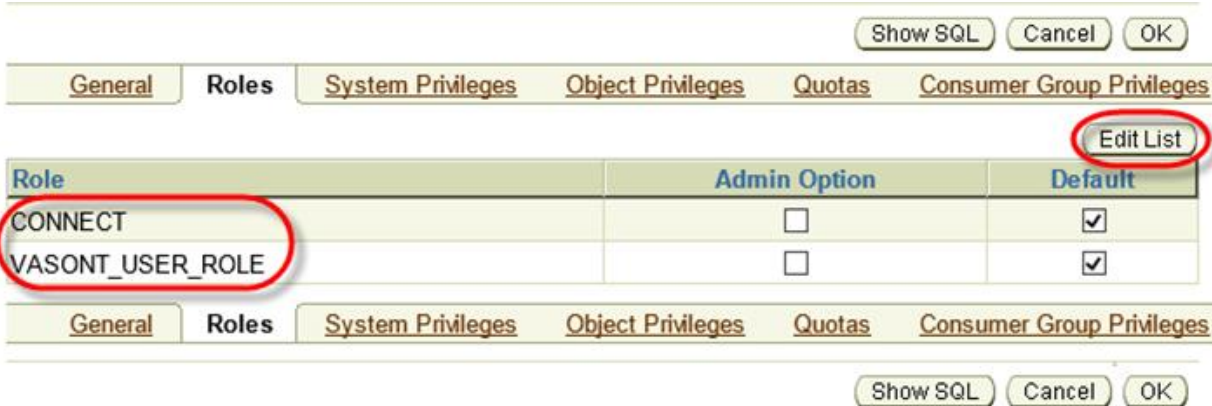
### Create User

General	Roles	System Privileges	Object Privileges	Quotas	Consumer Group Privileges
<div style="border: 2px solid red; border-radius: 15px; padding: 10px;"> <p>* Name <input type="text" value="JohnDoe"/></p> <p>Profile <input type="text" value="DEFAULT"/></p> <p>Authentication <input type="text" value="Password"/></p> <p>* Enter Password <input type="password" value="••••••••"/></p> <p>* Confirm Password <input type="password" value="••••••••"/></p> <p>For Password choice, the role is authorized via password.</p> <p><input type="checkbox"/> Expire Password now</p> <p>Default Tablespace <input type="text" value="VASONT_TS"/></p> <p>Temporary Tablespace <input type="text" value="TEMP"/></p> <p>Status <input type="radio"/> Locked <input checked="" type="radio"/> Unlocked</p> </div>					

4. Select the "Roles" tab and grant the following roles using the "Edit" button shown below. The Default Radio button should be checked and the Admin Option is to be unchecked for both roles:

- **CONNECT**

- **VASONT\_USER\_ROLE**



Role	Admin Option	Default
CONNECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VASONT_USER_ROLE	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Select the "OK" button to create the Vasont user's account.
6. Repeat steps 2 through 5 for each Vasont user for which an account is to be established at this time.

At this time, you may disconnect the *Oracle Enterprise Manger* from the Oracle Instance that will house the Vasont Database Schema. To do so, select the "logout" link in the upper right hand corner of the *Oracle Enterprise Manger* home.



### SQL PLUS - Creating the Vasont Users' Oracle Account



This SQLPLUS example shows the creation of a Vasont Users' Oracle account. Steps 1 through 5 from above can all be completed using one SQL statement logged in as SYS:

```
SQL> CREATE USER "JOHNDOE" PROFILE "DEFAULT" IDENTIFIED BY "password"
DEFAULT TABLESPACE "VASONT_TS" TEMPORARY TABLESPACE "TEMP" ACCOUNT UNLOCK
GRANT "CONNECT" TO "JOHNDOE" GRANT "VASONT_USER_ROLE" TO "JOHNDOE";
```

## Loading Vasont Schema - Oracle Legacy Import

### Creating Vasont Schema Owner's Oracle Account


The Vasont Schema owner is an Oracle user account that “owns” all of the tables, indexes and other database objects that comprise the Vasont Database Schema. The Vasont Schema owner will be associated with the tablespace(s) established in the Creating the Vasont Tablespace(s) section above, so all of the owned database objects will be physically stored in the defined tablespace(s).

1. On the tabs towards the top of the page, select "Server". Under the Security menu, below the tabs, select "Users" – The Users OEM page will appear.



The screenshot shows the Oracle Enterprise Manager interface. At the top, there are four tabs: **Server**, **Schema**, **Data Movement**, and **Software and Support**. The **Server** tab is circled in red. Below the tabs, there are two main sections: **Database Configuration** and **Oracle Scheduler**. Under **Database Configuration**, there are links for [Memory Advisors](#), [Automatic Undo Management](#), [Initialization Parameters](#), and [View Database Feature Usage](#). Under **Oracle Scheduler**, there are links for [Jobs](#), [Chains](#), [Schedules](#), [Programs](#), [Job Classes](#), [Windows](#), [Window Groups](#), [Global Attributes](#), and [Automated Maintenance Tasks](#). Below these, there are two more sections: **Resource Manager** and **Security**. Under **Resource Manager**, there are links for [Getting Started](#), [Consumer Groups](#), [Consumer Group Mappings](#), [Plans](#), and [Settings](#). Under **Security**, there are links for [Users](#), [Roles](#), [Profiles](#), [Audit Settings](#), and [Transparent Data Encryption](#). The **Users** link is circled in red.

2. Select "Create", located on the far right of the Users page just above the list. The Add User page will appear



The screenshot shows the Oracle Enterprise Manager 'Users' page. At the top, there is a 'Selection Mode' dropdown set to 'Single'. Below this, there are buttons for 'Edit', 'View', and 'Delete'. To the right of these buttons is an 'Actions' dropdown menu set to 'Create Like', followed by a 'Go' button. Further right, there is a 'Previous' button, a text box showing '1-25 of 131', and a 'Next 25' button. On the far right, there is a 'Create' button circled in red. Below the buttons, there is a table with the following columns: **Select**, **UserName**, **Account Status**, **Expiration Date**, **Default Tablespace**, **Temporary Tablespace**, **Profile**, **Created**, and **User Type**.

3. On the "General" tab, enter the required information in the noted fields:

**Name:** The Oracle user account name to be assigned to the Vasont schema owner.

**Profile:** DEFAULT

**Authentication:** Default - Password

**Enter Password:** The password to use for the Vasont schema owner account.

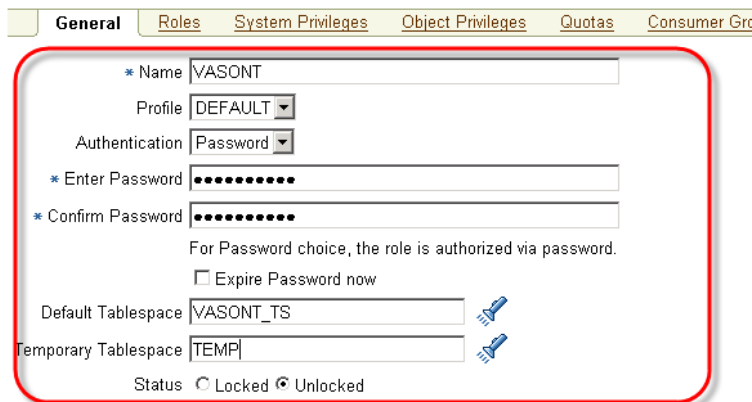
**Confirm Password:** Re-enter the password for the Vasont schema owner account.

**Default Tablespace:** The tablespace, created in the Creating the Vasont Tablespace(s) section above, that will be used to contain the Vasont Database Schema. If separate tablespaces are created for the Vasont data and indexes, specify the data tablespace here.

**Temporary Tablespace:** TEMP

**Status:** Default - Unlocked Radio selected

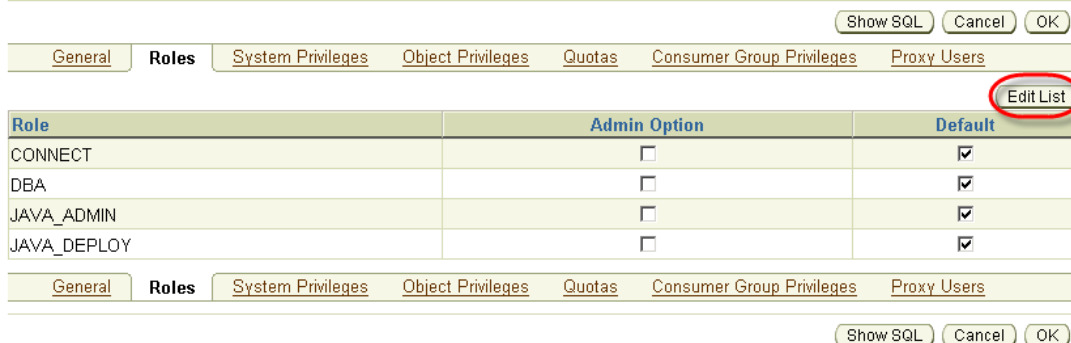
#### Create User



4. Select the "Roles" tab and grant the following roles using the "Edit List" button shown below. The Default Radio button should be checked and the Admin Option is to be unchecked for all 4 roles.

- **DBA**
- **CTXAPP** (if running Oracle 9.2.0.5.0 or higher)
- **JAVA\_ADMIN** (if running Oracle 9.2.0.5.0 or higher)
- **JAVA\_DEPLOY** (if running Oracle 9.2.0.5.0 or higher)

#### Create User

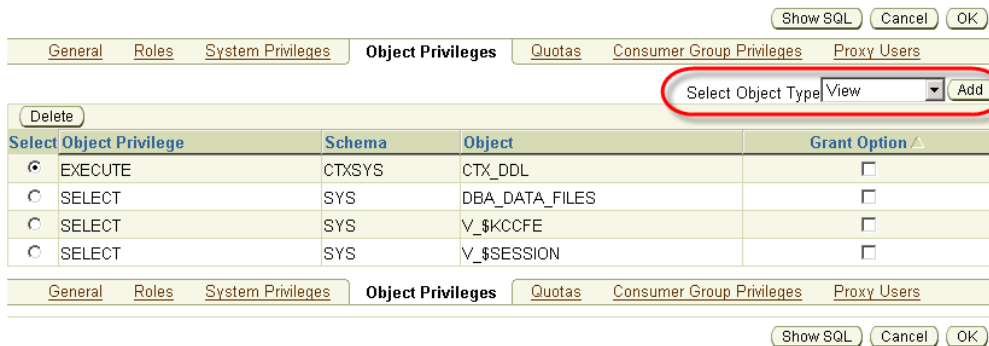


Role	Admin Option	Default
CONNECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DBA	<input type="checkbox"/>	<input checked="" type="checkbox"/>
JAVA_ADMIN	<input type="checkbox"/>	<input checked="" type="checkbox"/>
JAVA_DEPLOY	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Select the "Objects" tab and grant the following privileges using the "Add" button and selecting the appropriate object type from the drop down menu, shown below.

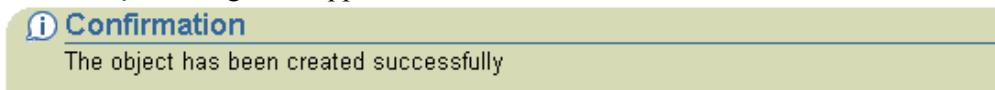
- **SELECT** on the **SYS.DBA\_DATA\_FILES** View
- **SELECT** on the **SYS.V\_\$KCCFE** View
- **SELECT** on the **SYS.V\_\$SESSION** View
- **EXECUTE** on the **CTXSYS.CTX\_DDL** Package (if running Oracle 9.2.0.5.0 or higher)

#### Create User



Select	Object Privilege	Schema	Object	Grant Option
<input checked="" type="radio"/>	EXECUTE	CTXSYS	CTX_DDL	<input type="checkbox"/>
<input type="radio"/>	SELECT	SYS	DBA_DATA_FILES	<input type="checkbox"/>
<input type="radio"/>	SELECT	SYS	V_\$KCCFE	<input type="checkbox"/>
<input type="radio"/>	SELECT	SYS	V_\$SESSION	<input type="checkbox"/>

6. Click the "OK" button to create the Vasont Schema owner's Oracle account – A "The object has been created successfully" message will appear at the confirmation bar.



7. You should still be on the "Users" page. Locate and edit the newly created Vasont Schema owner.



Select	Username	Account Status	Expiration Date	Default Tablespace
<input checked="" type="radio"/>	VASONT	OPEN		VASONT
<input type="radio"/>	WMSYS	EXPIRED & LOCKED	Jun 11, 2013 11:55:58 AM EDT	SYSAU

8. Select the "System Privileges" tab and remove the UNLIMITED TABLESPACE privilege from the list of Granted System Privileges, then click the Apply button – This action ensures that the Vasont Schema owner only has quotas for the specific tablespaces that were defined in step 3.

#### Edit User: VASONT



System Privilege	Admin Option
UNLIMITED TABLESPACE	<input type="checkbox"/>

9. Select the "Quotas" tab and give the UNLIMITED quota privilege to the tablespace name you created , then click the Apply button – This action ensures that the Vasont Schema owner can populate that particular tablespace to an unlimited amount of data.

USERS	None	0	MBytes
VASONT_TS (Default)	Unlimited	0	MBytes

[General](#)
[Roles](#)
[System Privileges](#)
[Object Privileges](#)
[Quotas](#)
[Consumer Group Privileges](#)
[Proxy Users](#)

Actions:



## SQL PLUS - Creating Vasont Schema Owner's Oracle Account



This SQLPLUS example shows the creation of a Vasont Schema Owners Oracle account. Steps 1 through 9 from above can all be completed using three SQL statements logged in as SYS. All three statements must be run in sequence.

```
SQL> CREATE USER "VASONT" PROFILE "DEFAULT" IDENTIFIED BY "password"
      DEFAULT TABLESPACE "VASONT_TS" TEMPORARY TABLESPACE "TEMP" ACCOUNT UNLOCK
      GRANT EXECUTE ON "CTXSYS"."CTX_DDL" TO "VASONT"
      GRANT SELECT ON "SYS"."DBA_DATA_FILES" TO "VASONT"
      GRANT SELECT ON "SYS"."V_$KCCFE" TO "VASONT"
      GRANT SELECT ON "SYS"."V_$SESSION" TO "VASONT"
      GRANT "CONNECT" TO "VASONT"
      GRANT "DBA" TO "VASONT"
      GRANT "JAVA_ADMIN" TO "VASONT"
      GRANT "JAVA_DEPLOY" TO "VASONT";
```

```
SQL> REVOKE UNLIMITED TABLESPACE FROM "VASONT";
```

```
SQL> ALTER USER "VASONT" QUOTA UNLIMITED ON "VASONT_TS";
```



## IMPORTANT NOTE

If your organization does not allow the use of the DBA role on the schema owner, you may manually add grants and roles to the schema owner as follows.

## Required Grants and Privileges for Vasont Schema Owner

In order to allow the Vasont schema owner privileges similar to the DBA role without having the DBA role associated with this account, the Vasont schema owner will need the following grants:

- CONNECT
- CTXAPP
- JAVA\_ADMIN
- JAVA\_DEPLOY
- IMP\_FULL\_DATABASE      *(if you want to be able to do Oracle Imports while connected as the Vasont Schema Owner)*
- EXP\_FULL\_DATABASE      *(if you want to be able to do Oracle Exports while connected as the Vasont Schema Owner)*

In addition, the Vasont schema owner will need the following Object Privileges:

- EXECUTE ON ctxsys.ctx\_ddl
- SELECT ON sys.dba\_data\_files
- SELECT ON sys.dba\_jobs
- SELECT on sys.v\_\$instance
- SELECT on sys.v\_\$kccfe
- SELECT on sys.v\_\$session

## Importing the Vasont Schema Using Legacy



As of Vasont Release ST.2.8.0, Oracle Datapump is the only supported method to export and import Vasont schema databases. Oracle Legacy Import and Export methods are not supported with any versions at or beyond Vasont ST.2.8.0.

To load the Oracle Export file containing the Vasont Schema to your Oracle Instance, perform the following actions:

1. Ensure that the Oracle Export (“dump”) file is available from the Oracle Server or your client PC – An Oracle Export file will typically have a “.dmp” file extension.
2. Open a Command Prompt (Windows) or Shell (UNIX).
3. *If the Oracle Instance in which the Vasont Schema is to be loaded is configured to store Unicode content (e.g., uses the UTF-8 Character Set), you will need to set an Environment Variable in the Command Prompt or Shell as followed (this is the Windows syntax – Unix users will utilize the export command):*

```
set NLS_LANG=AMERICAN_AMERICA.UTF8
```

4. Load the Oracle Export file, using Oracle’s Import utility, by entering the following command (line breaks added for clarity – Enter the entire command on a single line):

```
imp {SchemaOwner}/{SchemaPassword}@{ServiceName}  
file={ExportFilename} fromuser={ExportedOwner} touser={SchemaOwner}  
log=import.log commit=y buffer=9000000 ignore=y
```

Where:

***{SchemaOwner}*** is the Vasont Schema owner created in the Creating the Vasont Schema Owner’s Oracle Account section above

***{SchemaPassword}*** is the Password assigned to the ***{SchemaOwner}*** in the Creating the Vasont Schema Owner’s Oracle Account section above

***{ServiceName}*** is the Oracle Network Service Name used to connect to the Oracle Instance that will house the Vasont Schema

***{ExportFilename}*** is the filename and extension for the Oracle Export file to load

*{ExportedOwner}* is the Vasont Schema owner in the source Oracle Instance (from which the Oracle Export file was generated)

**NOTE:** If the Oracle Export file is provided from Vasont Systems, Vasont Systems will notify you of the appropriate *{ExportFilename}* and *{ExportedOwner}* values to use for this command.

**Example:**

```
imp vasont/password@vasont_prod file=vasontdemo101.dmp
fromuser=demo touser=vasont log=import.log commit=y
buffer=9000000 ignore=y
```



If errors are noted as the load proceeds, do not abort the import – Certain errors are anticipated and are recoverable! Appendix A outlines possible import errors that are benign and can safely be ignored

5. As the Vasont Schema load (import) proceeds, the screen will give a rough estimation of the progress by listing each table as it is processed – The last table loaded will be WRAPPER\_RELATION, after which all Database constraints and triggers will be enabled.
6. After the Vasont Schema load (import) completes, review the import.log file that was generated by the load (import) process. If any errors were encountered, they will be reflected with IMP-XXXXXX or ORA-XXXXXX entries in the log file. Please refer to Appendix A to further troubleshoot Oracle Import errors...

## ***Loading Vasont Schema - Oracle Datapump Import***

An Oracle Datapump import works differently than an Oracle Legacy import whereas the schema owner is created automatically by the import itself. If you intend on changing the name of the schema owner during the import process, step 5 will help you determine the proper parameters.

## **Importing the Vasont Schema using Datapump - Matched Schema Owners**

To load the Oracle Export file containing the Vasont Schema to your Oracle Instance, matching the schema owner name, perform the following actions:

1. Ensure that the Oracle Export (“dump”) file is available from the Oracle Server or your client PC – An Oracle Export file will typically have a “.dmp” file extension.
2. Open a Command Prompt (Windows) or Shell (UNIX).

3. Datapump does not use the NLS\_LANG to do conversion between databases. Conversion between two database character sets is done purely based on the NLS\_CHARACTERSET (or NLS\_NCHAR\_CHARACTERSET for NCHAR, NVARCHAR and NCLOB datatypes) of the source and target database.
4. Load the Oracle Export file, using Oracle's Datapump utility, by entering the following command (line breaks added for clarity – Enter the entire command on a single line):

```
impdp {ImportAdmin}/{ImportAdminPassword}@{ServiceName}  
directory={DumpDir} dumpfile={ExportFilename}  
schemas={ExportedOwner} logfile={LogFilename} TRANSFORM=oid:n
```

Where:

*{ImportAdmin}* is the user which has permission to import the database schema

*{ImportAdminPassword}* is the Oracle password assigned to the *{ImportAdmin}*

*{ServiceName}* is the Oracle Network Service Name used to connect to the Oracle Instance that will house the Vasont Schema

*{DumpDir}* is the Oracle Network Service Name used to connect to the Oracle Instance that will house the Vasont Schema

*{ExportFilename}* is the filename and extension for the Oracle Export file to load

*{ExportedOwner}* is the Vasont Schema owner in the source Oracle Instance (from which the Oracle Export file was generated)

*{LogFilename}* is the filename and extension for the Oracle Export log file that is generated during the export

{TRANSFORM=oid:n} is very important. This argument is set so that oracle doesn't use the same object IDs that were used in the source database

**NOTE:** If the Oracle Export file is provided from Vasont Systems, Vasont Systems will notify you of the appropriate *{ExportFilename}* and *{ExportedOwner}* values to use for this command.

**Example:**

```
impdp dpuser/password@vasont_prod directory=DUMP_DIR  
dumpfile=vasont101.dmp schemas=VASONT logfile=import.log  
TRANSFORM=oid:n
```



If errors are noted as the load proceeds, do not abort the import – Certain errors are anticipated and are recoverable! Appendix A outlines possible import errors that are benign and can safely be ignored

5. As the Vasont Schema load (import) proceeds, the screen will give a rough estimation of the progress by listing each table as it processes larger tables first.
6. Once the Vasont Schema load (import) completes, review the import.log file that was generated by the load (import) process. If any errors were encountered, they will be reflected with IMP-XXXXX or ORA-XXXXX entries in the log file. Please refer to Appendix A to further troubleshoot Oracle Import errors...

## Importing the Vasont Schema using Datapump - Different Schema Owners

To load the Oracle Export file containing the Vasont Schema to your Oracle Instance, changing either the schema owner and/or the tablespace name, you must add the optional "remap\_schema" and/or "remap\_tablespace" parameters.

1. Ensure that the Oracle Export ("dump") file is available from the Oracle Server or your client PC – An Oracle Export file will typically have a ".dmp" file extension.
2. Open a Command Prompt (Windows) or Shell (UNIX).
3. Datapump does not use the NLS\_LANG to do conversion between databases. Conversion between two database character sets is done purely based on the NLS\_CHARACTERSET (or NLS\_NCHAR\_CHARACTERSET for NCHAR, NVARCHAR and NCLOB datatypes) of the source and target database.
4. Load the Oracle Export file, using Oracle's Datapump utility, by entering the following command (line breaks added for clarity – Enter the entire command on a single line):

```
impdp {ImportAdmin}/{ImportAdminPassword}@{ServiceName}  
directory={DumpDir} dumpfile={ExportFilename}  
schemas={ExportedOwner} logfile={LogFilename}  
remap_schema={SourceSchemaOwner}:{DestinationSchemaOwner}  
remap_tablespace={SourceTablespace}:{DestinationTablespace}  
TRANSFORM=oid:n
```

Where:

*{ImportAdmin}* is the user which has permission to import the database schema

*{ImportAdminPassword}* is the Oracle password assigned to the *{ImportAdmin}*

*{ServiceName}* is the Oracle Network Service Name used to connect to the Oracle Instance that will house the Vasont Schema

*{DumpDir}* is the Oracle Network Service Name used to connect to the Oracle Instance that will house the Vasont Schema

*{ExportFilename}* is the filename and extension for the Oracle Export file to load

*{ExportedOwner}* is the Vasont Schema owner in the source Oracle Instance (from which the Oracle Export file was generated)

*{LogFilename}* is the filename and extension for the Oracle Export log file that is generated during the export

*{SourceSchemaOwner}* is Vasont Schema owner in the source Oracle Instance (from which the Oracle Export file was generated)

*{DestinationSchemaOwner}* is Vasont Schema owner in the destination Oracle Instance (this will be the new name you will give your schema owner)

*{SourceTablespace}* is Vasont tablespace name in the source Oracle Instance (from which the Oracle Export file was generated)

*{DestinationTablespace}* is Vasont tablespace name in the destination Oracle Instance (this will be the new name you will give your tablespace)

{TRANSFORM=oid:n} is very important. This argument is set so that oracle doesn't use the same object IDs that were used in the source database

**NOTE:** If the Oracle Export file is provided from Vasont Systems, Vasont Systems will notify you of the appropriate *{ExportFilename}*, *{ExportedOwner}*, *{SourceSchemaOwner}* and *{SourceTablespace}* values to use for this command.

#### Example:

```
impdp dpuser/password@vasont_prod directory=DUMP_DIR
dumpfile=vasont101.dmp schemas=VASONT logfile=import.log
remap_schema=VASONT:TEST
remap_tablespace=VASONT_TS:TEST_TS TRANSFORM=oid:n
```



If errors are noted as the load proceeds, do not abort the import – Certain errors are anticipated and are recoverable! Appendix A outlines possible import errors that are benign and can safely be ignored

5. As the Vasont Schema load (import) proceeds, the screen will give a rough estimation of the progress by listing each table as it processes larger tables first.
6. Once the Vasont Schema load (import) completes, review the import.log file that was generated by the load (import) process. If any errors were encountered, they will be reflected with IMP-XXXXX or ORA-XXXXX entries in the log file. Please refer to Appendix A to further troubleshoot Oracle Import errors....:

## ***Preparing Vasont Schema for Day-to-Day Use***

In order to prepare the Vasont Schema for day-to-day use, a series of scripts must be executed against the Vasont Schema that was just loaded (imported). Additionally, certain advanced Vasont features (e.g., Oracle Text indexes, Server-Side Processing) may need to be configured in the Vasont Schema which can be referenced in Appendix B (Oracle Text Indexes) and Appendix C (Server-Side Processing).

## **Running Scripts to Enable the Vasont Schema**

A series of SQL scripts needs to be run against the Vasont Schema to activate the schema for Vasont usage, compile the database objects within the Vasont Schema and gather statistics for use by the Oracle Cost-Based Optimizer (CBO). The following instructions identify the scripts that need to be executed against the Vasont Schema.

All of the SQL scripts referenced in this section can be found in the SQL folder on your Vasont Installer.

1. Start SQL\*Plus (or SQL\*Plus Worksheet) and connect as a SYSDBA using the Oracle SYS account
2. Execute the SQL script **security1.sql**



If the Vasont Schema owner's account name is something other than VASONT, alter this script to replace VASONT with the appropriate account name before executing the script! This script file can be edited in Notepad, Word pad or any other text editor that you have at your disposal.

3. Change your database connection in SQL\*Plus (or SQL\*Plus Worksheet) using the following command:

```
connect {SchemaOwner}/{SchemaPassword}@{ServiceName}
```

Where:

{SchemaOwner} is the Vasont Schema owner created

{SchemaPassword} is the Password assigned to the {SchemaOwner}

{ServiceName} is the Oracle Network Service Name used to connect to the Vasont Schema

3. Execute the SQL script **vasont\_role.sql**.



If the Vasont Schema owner's account name is something other than VASONT, alter this script to replace VASONT with the appropriate account name before executing the script! This script file can be edited in Notepad, Word pad or any other text editor that you have at your disposal.

4. Execute the SQL script **setser\_mmmmyyyy.sql**, where mmmmyyyy represents the month and year in which the script expires (e.g., setser\_Oct2013.sql)



For security purposes, Vasont Systems only provides "setser" scripts on a monthly basis – These scripts expire on the first of the month that it indicated in the filename. If you require a new copy of the "setser" script, please contact Vasont Systems for assistance!

5. Execute the analyze script: **analyze\_oracle11+.sql**

The analyze script may take quite a bit of time (even up to a few hours), depending on the size of the Vasont Schema that was loaded (imported).

6. Execute the SQL script **compobj.sql**

A successful compile will report the following:

-----  
*All Vasont PL/SQL Objects were successfully compiled...*  
-----

Please report any un-compiled objects to Vasont.



If compobj.sql reports that Java Classes failed to compile, you must execute the procedures outlined in Appendix C –Server-Side Processing.

From an Oracle point of view, the Vasont Schema is now ready for use – One further action is required, however, to ensure that each individual Vasont user can successfully connect to the Vasont Database Schema.



## Setting the Vasont Master Login Account

For Vasont users to properly connect to the Vasont Schema, the master Login Account information (for the Vasont Schema owner) needs to be burned in to the Vasont Database itself. Use the following steps to accomplish this task:

1. Start the Vasont Administrator application from a client PC.
2. Log in to Vasont Administrator using the Vasont Schema owners Oracle account name, Oracle account password and the appropriate Database Profile (that points to the newly Vasont Schema).
3. After a successful login, you can exit the Vasont Administrator application.

Vasont users will now be able to access the Vasont Schema using their individual login accounts.

***NOTE: The steps in this section must be performed any time the Vasont Schema owner's Password is changed.***

## Refreshing your Vasont Schema from an Oracle Export

The purpose of this section is to explain the process necessary to remove a Vasont Database Schema from an Oracle Instance and “refresh” that Schema from an Oracle Export (“dump” file) that was provided by Vasont Systems or obtained from another Vasont installation at your facilities. Typically, this action is taken when Vasont Systems has groomed a Vasont Database Schema for your use or when you have a need to refresh a Vasont Database Schema from another Schema in operation (e.g., refreshing a “test” Schema from a “production” Schema).

A Vasont Schema Update (or refresh) entails several steps, including dropping the existing Vasont Schema Owner, importing the Oracle Export file and special actions required to prepare the schema for day-to-day use.

If you are not updating an existing Vasont Schema (and are instead installing the Vasont Schema into an Oracle Instance where Vasont does not exist), please refer to the section above, *Creating a New Vasont Schema from an Oracle Export*, on page 5.

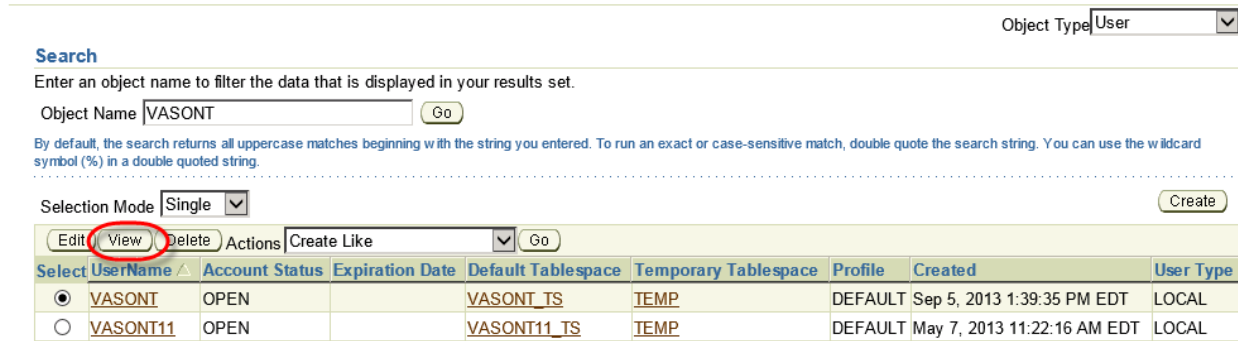
## Noting the Vasont Schema Owner's Settings

Before dropping the existing Vasont Schema and rebuilding the Schema from an Oracle Export file, the current settings for the Vasont Schema owner should be noted. These settings will need to be re-established when the Vasont Schema owner is re-created in the Re-Creating the Vasont Schema Owner section below.

1. In Oracle Enterprise Manager, on the tabs towards the top of the page, select "Server". Under the Security menu, below the tabs, select "Users" – The Users OEM page will appear.



2. Use the radio select and choose the Vasont Schema owner's Oracle user account (e.g., VASONT), then click on view.



### 3. Make note of the following information:

- Tablespaces (Default)
- Tablespaces (Temporary)
- Granted Roles
- Quota Sizes (Any tablespace set to <unlimited> or a specific value)

#### View User: VASONT

##### General

Name **VASONT**  
Profile **DEFAULT**  
Authentication **Password**  
Default Tablespace **VASONT\_TS**  
Temporary Tablespace **TEMP**  
Status **UNLOCK**  
Default Consumer Group **None**

##### System Privileges

System Privilege	Admin Option
No items found	

##### Object Privileges

Object Privilege	Schema	Object	Grant Option
No items found			

##### Roles

Role	Admin Option	Default
CONNECT	N	Y
DBA	N	Y
JAVA_ADMIN	N	Y
JAVA_DEPLOY	N	Y

##### Quotas

Tablespace	Quota	Value	Unit
VASONT_TS (Default)	Unlimited		

## Dropping the Vasont Schema Owner and its Objects

1. In Oracle Enterprise Manager, on the tabs towards the top of the page, select "Server". Under the Security menu, below the tabs, select "Users" – The Users OEM page will appear.



The screenshot shows the Oracle Enterprise Manager interface. At the top, there are four tabs: **Server**, **Schema**, **Data Movement**, and **Software and Support**. The **Server** tab is selected and circled in red. Below the tabs, there are two main sections: **Database Configuration** and **Resource Manager**. Under **Database Configuration**, there are links for [Memory Advisors](#), [Automatic Undo Management](#), [Initialization Parameters](#), and [View Database Feature Usage](#). Under **Resource Manager**, there are links for [Getting Started](#), [Consumer Groups](#), [Consumer Group Mappings](#), [Plans](#), and [Settings](#). To the right of these sections, there is a **Security** section with a list of options: [Jobs](#), [Chains](#), [Schedules](#), [Programs](#), [Job Classes](#), [Windows](#), [Window Groups](#), [Global Attributes](#), [Automated Maintenance Tasks](#), [Users](#), [Roles](#), [Profiles](#), [Audit Settings](#), and [Transparent Data Encryption](#). The **Users** option is circled in red.

- In the "Users" page, select radio button next to the schema owner to drop. Select the "Delete" button at the top to remove the schema owners and its associated objects from within the tablespace.

## Users

Object Type

---

### Search

Enter an object name to filter the data that is displayed in your results set.

Object Name

By default, the search returns all uppercase matches beginning with the string you entered. To run an exact or case-sensitive match, double quote the search string. You can use the wildcard symbol (%) in a double quoted string.

---

Selection Mode

Select	UserName	Account Status	Expiration Date	Default Tablespace	Temporary Tablespace	Profile	Created	User Type
<input checked="" type="radio"/>	VASONT	OPEN		VASONT_TS	TEMP	DEFAULT	May 7, 2013 11:22:16 AM EDT	LOCAL

- A message will appear indicating that the user "...still owns object(s)..." – Click the Yes button to confirm the removal of the Vasont Schema owner.

## Confirmation

User VASONT still owns object(s) . Are you sure you want to remove user VASONT and the object(s) together, using the CASCADE option?

- The actual "drop" of the Vasont Schema owner may take some time (up to 15 minutes, roughly), depending on the size of the Vasont Schema being removed and the speed of your hard disk array.

## Verifying the Tablespace Name(s) Match the Schema Source

Vasont Database Schemas include several tables that utilize columns with Oracle's BLOB datatype. BLOB columns offer superior performance and flexibility over the older RAW datatypes, which will no longer be supported by Oracle in the future, but have certain limitations during an Oracle Legacy Import process. Specifically, tables with BLOB columns will fail to import if the tablespace name(s) embedded in the source Oracle Export file do not match the tablespace name(s) establishing for the destination schema. Refer to Oracle Note 197699.1 (IMP-00003 ORA-00959 ON IMPORT OF TABLE WITH CLOB DATATYPES) for a detailed description of the problems that can occur when importing LOB datatypes – The note is specific to CLOB datatypes, but the limitations and concepts apply to all LOB datatypes (including BLOB datatypes) in general.

At this time, review the tablespace name(s) noted in the Noting the Vasont Schema Owner's Settings section above to the tablespace name(s) for the source Schema. If the source Vasont Database Schema was provided by Vasont Systems, the tablespace name(s) will be included with the delivery. If the source Vasont Database Schema was obtained internally (e.g., to

establish a “sandbox” or refresh a development area with production data), the tablespace name(s) can be obtained from the Oracle Instance housing the source Schema.

If the tablespace name(s) for the source and destination schemas differ, AND you are using the Legacy Oracle import method, Vasont Systems highly recommends dropping the existing tablespace(s) noted in the "Noting the Vasont Schema Owner's Settings" section above and creating new tablespace(s) that match those of the source Vasont Database Schema. There is no need to drop the tablespace when using datapump, as you are able to "remap" the tablespace and schema owner.

## ***Importing the Vasont Schema***

From here, you may either create the new tablespace on page 3 (if using Oracle Legacy Import) and/or start the Oracle import process. Please refer to the previous sections, Loading the Vasont Schema - Legacy (page 11) or Datapump (page 16), going forward with your schema refresh.

## **Exporting the Vasont Schema using Oracle Legacy**

In this Data Pump Export example, we will be using the Windows Operating System. To export the Vasont schema using the Oracle Data Pump utility, perform the following actions:

1. Open a Command Prompt.
2. **If the Oracle Instance from which the Vasont Schema is to be exported is configured to store Unicode content (e.g., uses the UTF-8 Character Set),** you will need to set an Environment Variable in the Command Prompt or Shell as followed (this is the Windows syntax – Unix users will utilize the export command):

```
set NLS_LANG=AMERICAN_AMERICA.UTF8
```

3. Export the Vasont schema file, using Oracle's Export utility, by entering the following command (line breaks added for clarity – Enter the entire command on a single line):

```
exp {SchemaOwner}/{SchemaPassword}@{ServiceName} owner={SchemaOwner}  
file={ExportFilename}.dmp log=export.log consistent=y grants=n  
statistics=none
```

### **Where:**

**{SchemaOwner}** is the Vasont Schema owner

**{SchemaPassword}** is the Oracle Password assigned to the {SchemaOwner}

**{ServiceName}** is the Oracle Network Service Name used to connect to the Oracle Instance that houses the Vasont Schema

**{ExportFilename}** is the filename to use for the Export file (any filename can be used, just be sure to specify the .dmp file extension).

Example:

```
exp vasont/myvasont@vasont_prod owner=vasont file=vasont_20080721.dmp log=export.log
consistent=y grants=n statistics=none
```

- As the Vasont Schema (export) proceeds, the screen will give a rough estimation of the progress by listing each table as it is processed – The last table exported will be WRAPPER\_RELATION, after which all Database constraints and triggers will be exported.

If Vasont Systems has requested a copy of your Vasont schema for troubleshooting purposes, it is recommended that you compress the resulting {ExportFilename}.dmp file using WinZip or a similar tool, then post the compressed copy of the Export file to your assigned FTP site. Please ask your Vasont Analyst for your FTP credentials.

## Exporting the Vasont Schema using Oracle Datapump

In this Data Pump Export example, we will be using the Windows Operating System. To export the Vasont schema using the Oracle Data Pump utility, perform the following actions:

- First, you will need to create an Oracle export parameter file. Vasont exports use specific Oracle parameters and must be contained within a parfile. In this example, the parfile will be named as "DPEXport.par". Using your favorite text editor, create the parfile as follows:

```
[DPEXport.par]
SCHEMAS={SchemaOwner}
DIRECTORY={AssignedDumpDirectory}
DUMPFILE={ExportFilename}.dmp
LOGFILE=EXPORT.log
EXCLUDE=GRANT
FLASHBACK_TIME= See the following chart for more details
REUSE_DUMPFILES=TRUE
```

The flashback timestamp will be different depending on the version of Oracle you are using.

Oracle Instance Version	FLASHBACK_TIME Parameter
Up to and including Oracle 10	"TO_TIMESTAMP(TO_CHAR(sysimestamp,'DD-MM-YYYY HH24:MI:SS'), 'DD-MM-YYYY HH24:MI:SS')"
Oracle 11 and Beyond	SYSTIMESTAMP

- Datapump does not use the NLS\_LANG to do conversion between databases. Conversion between two database character sets is done purely based on the NLS\_CHARACTERSET (or NLS\_NCHAR\_CHARACTERSET for NCHAR, NVARCHAR and NCLOB datatypes) of the source and target database
- Open a command prompt and perform the Oracle Export using the parfile created in step 1.

```
EXPDP {ExportAdmin}/{ExportAdminPassword}@{ServiceName} PARFILE=DPEXport.par
```

**Where:**

**{ExportAdmin} is the user which has permissions to export database schemas.**

**{ExportAdminPassword}** is the Oracle Password assigned to the **{ExportAdmin}**.  
**{ServiceName}** is the Oracle Network Service Name used to connect to the Oracle Instance that houses the Vasont Schema.

**Reference the PARFILE at the end of your export, which we created in step 1.**

4. Your export is complete after the utility displays a similar output shown below:

\*\*\*\*\*

Dump file set for SYSTEM.SYS\_EXPORT\_SCHEMA\_XX is:

O:\APP\ADMINISTRATOR\ADMIN\PRODU\DPDUMP\VASONT.DMP

Job "SYSTEM"."SYS\_EXPORT\_SCHEMA\_XX" successfully completed at 00:00:00

If Vasont Systems has requested a copy of your Vasont schema for troubleshooting purposes, it is recommended that you compress the resulting {ExportFilename}.dmp file using WinZip or a similar tool, then post the compressed copy of the Export file to your assigned FTP site. Please ask your Vasont Analyst for your FTP credentials.

## APPENDIX A - Oracle Import and Export Errors

### Oracle Import Errors

#### Oracle Legacy

1. If error messages similar to the following are noted for the CREATE\$JAVA\$LOB\$TABLE Table, execute the procedures outlined in Appendix C –Server-Side Processing.

**IMP-00017: following statement failed with ORACLE error 959:**

```
"CREATE TABLE "CREATE$JAVA$LOB$TABLE" ("NAME" VARCHAR2(700), "LOB"  
BLOB, "LOADTIME" DATE) PCTFREE 10 PCTUSED 40 INITRANS 1 MAXTRANS 255  
STORAGE(INITIAL 65536 FREELISTS 1 FREELIST GROUPS 1) TABLESPACE  
"VASONT_TS" LOGGING NOCOMPRESS LOB ("LOB") STORE AS (TABLESPACE  
"VASONT_TS" ENABLE STORAGE IN ROW CHUNK 8192 PCTVERSION 10 NOCACHE  
STORAGE(INITIAL 65536 FREELISTS 1 FREELIST GROUPS 1))"
```

**IMP-00003: ORACLE error 959 encountered**

**ORA-00959: tablespace 'VASONT\_TS' does not exist**

2. If error messages similar to the following are noted for the OBJECT\_CACHE Table, the errors can be ignored – The OBJECT\_CACHE Table was obsolete in Vasont Release 10

**IMP-00017: following statement failed with ORACLE error 959:**

```
"CREATE TABLE "OBJECT_CACHE" ("JOB_ID" NUMBER(*,0) NOT NULL ENABLE,  
"OBJECT_ID" NUMBER(*,0) NOT NULL ENABLE, "OBJECT_TYPE" VARCHAR2(20), "STATUS"  
CHAR(1), "OBJECT_DATA" BLOB) PCTFREE 15 PCTUSED 60 INITRANS 1 MAXTRANS 255  
STORAGE(INITIAL 131072 FREELISTS 1 FREELIST GROUPS 1) TABLESPACE  
"VASONT_TS" LOGGING NOCOMPRESS LOB ("OBJECT_DATA") STORE AS (TABLESPACE  
"VASONT_TS" ENABLE STORAGE IN ROW CHUNK 8192 PCTVERSION 10 NOCACHE  
STORAGE(INITIAL 65536 FREELISTS 1 FREELIST GROUPS 1))"
```

**IMP-00003: ORACLE error 959 encountered**

**ORA-00959: tablespace 'VASONT\_TS' does not exist**



## Oracle Datapump

1. The following 6 Oracle Import errors are displayed when importing a Vasont schema. These errors are normal and will be compiled correctly when you apply the security1.sql and compobj.sql scripts:

**ORA-39082: Object type ALTER\_FUNCTION:"VASONT"."VERIFY\_OWNERSHIP" created with compilation warnings**

**ORA-39082: Object type ALTER\_FUNCTION:"VASONT"."GET\_SYSTEM\_DATE" created with compilation warnings**

**ORA-39082: Object type ALTER\_FUNCTION:"VASONT"."GET\_OWNERS" created with compilation warnings**

**ORA-39082: Object type ALTER\_PROCEDURE:"VASONT"."VERIFYOWNERSHIP\_CHECKOUTSTATUS" created with compilation warnings**

**ORA-39082: Object type PACKAGE\_BODY:"VASONT"."CONNECTIONS" created with compilation warnings**

**ORA-39082: Object type PACKAGE\_BODY:"VASONT"."TEXT\_TOKENS" created with compilation warnings**

2. This particular error means that you did not drop the schema owner before the import process, as datapump automatically creates the schema owner that is stored in the Oracle "dump" file itself:

**ORA-31684: Object type USER:"VASONT" already exists**

3. These errors below indicate that the "TRANSFORM=oid:n" parameter was not used during the export. You will need to export the schema this parameter and re-import the schema.

**ORA-39083: Object type TYPE failed to create with error:**

**ORA-02304: invalid object identifier literal**

**Failing sql is:**

**CREATE TYPE "VASONT"."RAW\_OBJ\_TABLE" OID '83DE589B4DB84C6B913428EDAC0C9859' AS  
TABLE OF RAW\_OBJ;**

## ***Oracle Export Errors***

### **Oracle Legacy**

### **Oracle Datapump**

## APPENDIX B - Oracle Text Indexes

Vasont includes advanced features, in the Vasont query dialogs, that can use Oracle Text indexes to access content. The use of this feature allows Vasont queries to operate in ways similar to a Web search, including:

- Case-insensitive searching
- Locating content containing “any” words/phrases
- Locating content containing “all” words/phrases
- Searching within supported Vasont Multimedia components (e.g., Text, PDF, Word Documents, etc.)
- “Sounds Like” (SOUNDEX) searching
- “Spelled Like” (Fuzzy) searching
- “Stemming” search capabilities (locating words with same linguistic root)

NOTE: If the Vasont Schema loaded above includes the Oracle Text indexes, there is no need to create the Oracle Text indexes at this time. The following sections will help you to determine if the Oracle Text indexes are already present in the newly loaded Vasont Schema.

### Requirements

In order to enable Oracle Text for use with Vasont, your system must meet the following requirement:

- Oracle 11.2.0.3 or higher (Oracle11g Release 2 or higher recommended)

### Script Files Location

All of the SQL script files referenced in this document, unless otherwise indicated, can be found in the Installation and Configuration\Oracle\Optional Features\Oracle Text folder on your Vasont Installer.

### Ensuring Oracle Text is Available for Vasont

In order to utilize Oracle Text, Vasont requires the Oracle Text feature to be installed in the Oracle instance housing the Vasont database schema. Additionally, the Vasont Schema owner needs the appropriate Oracle rights to administer and utilize the Oracle Text features. The steps in this section verify that Oracle Text is available and enable its use within the Vasont database schema.

The steps in this section, and the remainder of this document, assume that the basic requirements for using Oracle Text (as outlined in the Requirements section above) have been met.

### Verifying Oracle Text is Installed in the Instance

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect using the SYS account and run the following script file:

```
check_oracle_text_availability.sql
```

If no rows are returned. The Oracle Text feature is not installed in the instance housing Vasont. The feature can be added using Oracle’s *Database Configuration Assistant* – Refer to your Oracle Documentation for instructions on adding the Oracle Text feature.

If the VERSION column does not indicate 11.2.0.3 (or higher). Ensure Oracle 11g Release 2 is installed.

If the STATUS column does not indicate VALID. The Oracle Text feature is not properly installed or configured in your Oracle instance. Refer to your Oracle Documentation, or contact Oracle Support, to rectify the problem before continuing.

## Enabling On-Line Build of Oracle Text Indexes

In order for the Oracle Text indexes to be built (or re-built) on-line, the SYS.IND\_ONLINE\$ table must be available. This table is not created automatically by earlier versions of Oracle's Database Configuration Assistant, so it must be created now using the script provided by Oracle.

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect using the SYS account and run the following script file:

```
{ORACLE_HOME}\rdbms\admin\catcio.sql
```

Where {ORACLE\_HOME} represents the Oracle Home folder in which is installed.

## Granting the Vasont Schema Owner Oracle Text Privileges

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect using the SYS account and issue the following SQL statements:

```
GRANT ctxapp TO {VasontSchemaOwner};  
GRANT EXECUTE ON ctxsys.ctx_ddl TO {VasontSchemaOwner};
```

Where {VasontSchemaOwner} is the Oracle account name for the Vasont Schema owner.

## Checking for Oracle Text Indexes in the New Vasont Schema

The most reliable method for determining if Oracle Text indexes are already present in the Vasont Schema (were embedded in the Oracle Export file) is to interrogate the Database Objects in the newly imported Vasont Schema. To check for the existence of the Oracle Text indexes:

1. Start up SQL\*Plus (or SQL\*Plus Worksheet) and connect using the Vasont Schema owner's Oracle account name and password – For the Service, specify the Oracle Service Name used to access the new Vasont Schema.

2. Run the following SQL statement:

```
SELECT index_name  
FROM user_indexes  
WHERE (index_name = 'RAW_TEXT_CTX_IDX'  
OR index_name = 'MM_BLOB_CTX_IDX'  
OR index_name = 'ANNOTATION_TEXT_CTX_IDX'  
OR index_name = 'ANNOTATION_ATTACH_CTX_IDX')  
OR index_name = 'MM_DESCRIPTION_CTX_IDX');
```

If rows are returned from this SQL statement, then Oracle Text indexes are present in the newly imported Vasont Schema – Make note of the index names returned.

## ***Creating Oracle Text Indexes for use in Vasont***

Vasont can utilize Oracle Text indexes on a variety of information stored in the Content Management System (CMS). The Oracle Text indexes are ultimately used by the Vasont Queries – When Oracle Text indexes are available, special Advanced Text operators (e.g., “Any Words”, “All Words”, “Near”) will appear under **Operators** in the query dialogs. The Advanced Text operators allow querying content, based on words, in a case-insensitive manner (very similar to Web searching through Google, Yahoo, etc.).

Vasont Systems provides scripts for building and maintaining Oracle Text indexes on the following information that is tracked within Vasont:

- Textual Content (see **Indexing Vasont’s Textual Content** below) – The textual content stored in Vasont typically consists of the SGML or XML (or other tagging structure) fragments that comprise the documents maintained in the CMS. Textual content may or may not contain tagging, depending on how the content is modeled in Vasont.
- Multimedia Content (see **Indexing Vasont’s Multimedia Content** below) – The multimedia content stored in Vasont can be used with the documents maintained in the CMS (e.g., images, tables, etc.) or metadata (supporting documents, composed documents, etc.). Oracle text is capable of indexing most text-based formats (e.g., HTML, Word, Excel, PDF, etc.), but not graphics or image files.
- Component Annotations (see **Indexing Vasont’s Component Annotations** below) – Annotations are textual comments or narrative that Vasont user’s can attach to any Component (content item) stored in the CMS.
- Component Annotation Attachments (see **Indexing Vasont’s Annotation Attachments** below) – For Component Annotations, the user can opt to add Attachments. Oracle Text indexes for these Attachments have the same limitations as Multimedia content (only text-based formats are supported).

It is feasible for Vasont to utilize Oracle Text indexes on other content as well (e.g., Attribute data). Since Oracle Text indexes on these other types of content are not typically required, Vasont Systems does not automatically provide scripting support. If you desire to implement Oracle Text indexes in other areas of the CMS, however, please contact Vasont Systems for assistance.

## ***Indexing Vasont’s Textual Content***

The procedures in this section will create an Oracle Text index for Vasont’s textual content. By building this Oracle Text index, queries against Vasont textual content can be performed quickly and flexibly in a manner similar to Web searches.

## **Creating the Storage Preference for Textual Content**

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
text_index_preference.sql
```

This script will create the Oracle Text storage preference that is used to build and maintain the Oracle Text index on Vasont’s textual content. The preference houses storage information for the Oracle Text tables and indexes, including the Tablespace in which these objects should be created and their storage characteristics (initial extent size, next extent size, percent increase, etc.).

## Creating the Index for Textual Content

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
text_index_create.sql
```

This script will create the actual Oracle Text index on Vasont's textual content. The time it takes to build the index will vary depending on the amount of textual content in Vasont, but will typically take under an hour depending on the Oracle Server Hardware and Software configuration.

Once the Oracle Text index is built, the Oracle Text operators will automatically appear for use when textual components are selected in Vasont's query dialogs.

## Scheduling the Maintenance of Textual Content Indexes

Unlike traditional indexes in the Oracle database, Oracle Text indexes are not automatically updated when data is inserted into the related tables (Oracle Text indexes are actually implemented as a group of special tables and indexes). However, one of the Oracle Text packages (CTX\_DDL) provides mechanisms to synchronize and optimize the Oracle Text indexes on demand or based on a scheduled job (using Oracle's DBMS\_JOB package). There are two fundamental maintenance actions that are performed against Oracle Text indexes.

The first action, synchronization, processes inserts, updates and deletes (tracked in a DML queue) that have been applied to the base table (against which the Oracle Text index is built) – In other words, this process synchronizes the Oracle Text index with the current state of the base table. The overhead for Oracle Text index synchronization is minimal, but would be a burden on the system if running constantly. As a result, synchronization should be scheduled fairly frequently (so the Oracle Text indexes accurately reflect the associated content), but not so frequent that the synchronization creates performance problems -- Typically, performing synchronization every 30 minutes should meet the Vasont users' needs without undermining system performance.

Index synchronization can (and ultimately will) cause Oracle Text index fragmentation, however, resulting in the need for the second maintenance action, optimization. When optimization is performed against an Oracle Text index, this fragmentation is eliminated resulting in 1) a smaller index and 2) improved query response time. Ideally, optimization should be performed during "off-peak" usage and on a more periodic basis.

For further discussion on the synchronization and optimization concepts, refer to the Managing DML Operations for a CONTEXT Index section of Oracle's Oracle Text Application Developers Guide.

Vasont Systems has provided a simple script for scheduling the synchronization and optimization of the Oracle Text Vasont Systems has provided a simple script for scheduling the synchronization and optimization of the Oracle Text indexes on Vasont's textual content. This script can be edited by the Oracle Database Administrator and is fairly flexible, allowing the synchronization to be scheduled for every nn minutes (default 30) and the optimization to be scheduled for every nn days (default 1) at a specific time (23:01 (11:01 PM) by default).

If the script provided by Vasont Systems does not meet the desires or needs of the Oracle Database Administrator and/or Vasont users, `text_index_maint.sql` can be altered to meet the unique requirements of your Oracle environment.



If the script provided by Vasont Systems is not used, take care to ensure the synchronization and optimization jobs for the Vasont textual content index are only scheduled once!

Multiple synchronization or optimization jobs can result in degraded system performance (the provided script will prevent duplicate jobs from being submitted).

To utilize the Text index maintenance script provided by Vasont Systems, perform the following steps:

1. Open the following script file in a text editor:

```
text_index_maint.sql
```

2. In text\_index\_maint.sql, locate the following block of code in the DECLARE section:

```
-----  
-- INDEX OPTIMIZATION FREQUENCY AND TIME VARIABLES --  
-----  
var_sync_minutes VARCHAR2(2000) := '30';  
var_opt_days VARCHAR2(2000) := '1';  
var_opt_time VARCHAR2(2000) := '23:01';
```

3. By default, index synchronization is scheduled to occur every 30 minutes – If a different frequency is desired, change the value for var\_sync\_minutes from 30 to the desired number of minutes.
4. By default, index optimization is scheduled to occur daily – If a different frequency is desired, change the value for var\_opt\_days from 1 to the desired number of days.
5. By default, index optimization is scheduled to occur at 11:01 PM (23:01) – If a different time is desired, change the value for var\_opt\_time from 23:00 to the desired time (be sure to use “military” time (with a leading zero, if applicable)).
6. Save the changes to text\_index\_maint.sql.
7. For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the altered text\_index\_maint.sql script – A message similar to the following will appear:

```
Job# 163: RAW_TEXT_CTX_IDX Synchronization (every 30 minutes) ...  
Job# 164: RAW_TEXT_CTX_IDX Optimization (every 1 days at 23:01) ...
```

The Oracle Text index on Vasont’s textual content will now be maintained automatically. Keep in mind, however, that Vasont users’ may not be able to immediately execute an Oracle Text query (in Vasont) against newly added content – New content will only be “picked up” by the Oracle Text index once the synchronization process has been run based on the scheduled job.

## Dropping Oracle Text Indexes on Textual Content

Oracle Text indexes can be dropped at any time without jeopardizing the integrity of the Vasont Database – Dropping Oracle

Text indexes will only affect the availability of the Advanced Text operators in Vasont's query dialogs.

To drop the Oracle Text index on Vasont's textual content:

1. For the Oracle instance that houses Vasont, start up *SQL\*Plus* (or *SQL\*Plus Worksheet*), connect as the Vasont Schema owner and run the following SQL statement:

```
DROP INDEX raw_text_ctx_idx FORCE;
```

The FORCE keyword is required when dropping Oracle Text indexes.

2. Utilize the **remove** function, from Oracle's DBMS\_JOB Package, to remove the jobs scheduled to synchronize and optimize the Oracle Text indexes on Vasont's textual content. To determine the jobs to be removed, use the following SQL query:

```
SELECT job FROM user_jobs WHERE what LIKE '%RAW_TEXT_CTX%';
```

Which will yield results similar to the following:

```
JOB
-----
163
164
```

The required SQL statements, based on this example, would then be:

```
EXECUTE DBMS_JOB.remove(163);
EXECUTE DBMS_JOB.remove(164);
COMMIT;
```

Where 163 and 164 are the Job numbers obtained from the SQL query executed above – The COMMIT; is required for the Jobs to be completely removed from the Oracle Database.

3. Use the **drop\_preference** function, from the Oracle Text CTX\_DDL Package, to remove the Oracle Text storage preference associated with Vasont's textual content:

```
EXECUTE CTX_DDL.drop_preference('vasont_text_storage');
```

The Oracle Text index on Vasont's textual content can be rebuilt, at any time, as outlined in the **Indexing Vasont's Textual Content** section above.

## Indexing Vasont's Multimedia Content

The procedures in this section will create an Oracle Text index for Vasont's Multimedia content. By building this Oracle Text index, queries can be performed against documents (or files) stored internal to the Vasont Database. For example, queries can be



performed in Vasont based on words, phrases, etc. found in Microsoft Word documents, Adobe PDFs, Text files, etc. that are stored in Vasont as Multimedia components.

## Creating the Storage Preference for Multimedia Content

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
mm_index_preference.sql
```

This script will create the Oracle Text storage preference that is used to build and maintain the Oracle Text index on Vasont's multimedia content. The preference houses storage information for the Oracle Text tables and indexes, including the Tablespace in which these Objects should be created and their storage characteristics (initial extent size, next extent size, percent increase, etc.).

## Creating the Index for Multimedia Content

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
mm_index_create.sql
```

This script will create the actual Oracle Text index on Vasont's multimedia content. The time it takes to build the index will vary depending on the amount of multimedia content in Vasont, but will typically take under an hour depending on the Oracle Server Hardware and Software configuration.

Once the Oracle Text index is built, the Oracle Text operators will automatically appear for use when multimedia components are selected in Vasont's query dialogs.

## Scheduling the Maintenance of Multimedia Content Indexes

For a full discussion on the Oracle Text index maintenance processes and concepts, refer to the Scheduling the Maintenance of Textual Content Indexes section above.

Vasont Systems has provided a simple script for scheduling the synchronization and optimization of the Oracle Text indexes on Vasont's multimedia content. This script can be edited by the Oracle Database Administrator and is fairly flexible, allowing the synchronization to be scheduled for every nn minutes (default 60) and the optimization to be scheduled for every nn days (default 3) at a specific time (00:01 (12:01 AM) by default).

If the script provided by Vasont Systems does not meet the desires or needs of the Oracle Database Administrator and/or Vasont users, mm\_index\_maint.sql can be altered to meet the unique requirements of your Oracle environment.



If the script provided by Vasont Systems is not used, take care to ensure the synchronization and optimization jobs for the Vasont multimedia content index are only scheduled once! Multiple synchronization or optimization jobs can result in degraded system performance (the provided script will prevent duplicate jobs from being submitted).

To utilize the Multimedia index maintenance script provided by Vasont Systems, perform the following steps:

1. Open the following script file in a text editor:

```
mm_index_maint.sql
```

2. In mm\_index\_maint.sql, locate the following block of code in the DECLARE section:

```
-----  
-- INDEX OPTIMIZATION FREQUENCY AND TIME VARIABLES --  
-----  
var_sync_minutes VARCHAR2(2000) := '60';  
var_opt_days VARCHAR2(2000) := '3';  
var_opt_time VARCHAR2(2000) := '00:01';
```

3. By default, index synchronization is scheduled to occur every 60 minutes – If a different frequency is desired, change the value for var\_sync\_minutes from 60 to the desired number of minutes.
4. By default, index optimization is scheduled to occur every three days – If a different frequency is desired, change the value for var\_opt\_days from 3 to the desired number of days.
5. By default, index optimization is scheduled to occur at 12:01 AM (00:01) – If a different time is desired, change the value for var\_opt\_time from 00:01 to the desired time (be sure to use “military” time (with a leading zero, if applicable)).
6. Save the changes to mm\_index\_maint.sql.
7. For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the altered mm\_index\_maint.sql script – A message similar to the following will appear:

```
Job# 165: MM_BLOB_CTX_IDX Synchronization (every 60 minutes) ...  
Job# 166: MM_BLOB_CTX_IDX Optimization (every 3 days at 00:01) ...
```

The Oracle Text index on Vasont’s multimedia content will now be maintained automatically. Keep in mind, however, that Vasont users’ may not be able to immediately execute an Oracle Text query (in Vasont) against newly added content – New content will only be “picked up” by the Oracle Text index once the synchronization process has been run based on the scheduled job.

## Dropping Oracle Text Indexes on Multimedia Content

Oracle Text indexes can be dropped at any time without jeopardizing the integrity of the Vasont Database – Dropping Oracle Text indexes will only affect the availability of the Advanced Text operators in Vasont’s query dialogs.

To drop the Oracle Text index on Vasont's multimedia content:

1. For the Oracle instance that houses Vasont, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following SQL statement:

```
DROP INDEX mm_blob_ctx_idx FORCE;
```

The FORCE keyword is required when dropping Oracle Text indexes.

2. Utilize the **remove** function, from Oracle's DBMS\_JOB Package, to remove the jobs scheduled to synchronize and optimize the Oracle Text indexes on Vasont's multimedia content. To determine the jobs to be removed, use the following SQL query:

```
SELECT job
FROM user_jobs
WHERE what LIKE '%MM_BLOB_CTX%';
```

Which will yield results similar to the following:

```
JOB
-----
165
166
```

The required SQL statements, based on this example, would then be:

```
EXECUTE DBMS_JOB.remove(165);
EXECUTE DBMS_JOB.remove(166);
COMMIT;
```

Where 165 and 166 are the Job numbers obtained from the SQL query executed above – The COMMIT; is required for the Jobs to be completely removed from the Oracle Database.

3. Use the **drop\_preference** function, from the Oracle Text CTX\_DDL Package, to remove the Oracle Text storage preference associated with Vasont's multimedia content:

```
EXECUTE CTX_DDL.drop_preference('vasont_mm_storage');
```

The Oracle Text index on Vasont's multimedia content can be rebuilt, at any time, as outlined in the **Indexing Vasont's Multimedia Content** section above.

## **Indexing Vasont's Multimedia Description Content**

The procedures in this section will create an Oracle Text index for Vasont's Multimedia description content. By building this Oracle Text index, queries can be performed against documents (or files) stored internal to the Vasont Database. For example, queries can be performed in Vasont based on words, phrases, etc. found in Microsoft Word documents, Adobe PDFs, Text files, etc. that are stored in Vasont as Multimedia description components.

## Creating the Storage Preference for Multimedia Description Content

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
mm_description_preference.sql
```

This script will create the Oracle Text storage preference that is used to build and maintain the Oracle Text index on Vasont's multimedia description content. The preference houses storage information for the Oracle Text tables and indexes, including the Tablespace in which these Objects should be created and their storage characteristics (initial extent size, next extent size, percent increase, etc.).

## Creating the Index for Multimedia Description Content

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
mm_description_create.sql
```

This script will create the actual Oracle Text index on Vasont's multimedia description content. The time it takes to build the index will vary depending on the amount of multimedia description content in Vasont, but will typically take under an hour depending on the Oracle Server Hardware and Software configuration.

Once the Oracle Text index is built, the Oracle Text operators will automatically appear for use when multimedia descriptions are selected in Vasont's query dialogs.

## Scheduling the Maintenance of Multimedia Description Content Indexes

For a full discussion on the Oracle Text index maintenance processes and concepts, refer to the Scheduling the Maintenance of Textual Content Indexes section above.

Vasont Systems has provided a simple script for scheduling the synchronization and optimization of the Oracle Text indexes on Vasont's multimedia description content. This script can be edited by the Oracle Database Administrator and is fairly flexible, allowing the synchronization to be scheduled for every nn minutes (default 60) and the optimization to be scheduled for every nn days (default 3) at a specific time (00:01 (12:01 AM) by default). If the script provided by Vasont Systems does not meet the desires or needs of the Oracle Database Administrator and/or Vasont users, mm\_description\_maint.sql can be altered to meet the unique requirements of your Oracle environment.



If the script provided by Vasont Systems is not used, take care to ensure the synchronization and optimization jobs for the Vasont multimedia description content index are only scheduled once! Multiple synchronization or optimization jobs can result in degraded system performance (the provided script will prevent duplicate jobs from being submitted).

To utilize the Multimedia index maintenance script provided by Vasont Systems, perform the following steps:

1. Open the following script file in a text editor:

```
mm_description_maint.sql
```

2. In mm\_description\_maint.sql, locate the following block of code in the DECLARE section:

```
-----  
-- INDEX OPTIMIZATION FREQUENCY AND TIME VARIABLES --  
-----  
var_sync_minutes VARCHAR2(2000) := '60';  
var_opt_days VARCHAR2(2000) := '3';  
var_opt_time VARCHAR2(2000) := '00:01';
```

3. By default, index synchronization is scheduled to occur every 60 minutes – If a different frequency is desired, change the value for var\_sync\_minutes from 60 to the desired number of minutes.
4. By default, index optimization is scheduled to occur every three days – If a different frequency is desired, change the value for var\_opt\_days from 3 to the desired number of days.
5. By default, index optimization is scheduled to occur at 12:01 AM (00:01) – If a different time is desired, change the value for var\_opt\_time from 00:01 to the desired time (be sure to use “military” time (with a leading zero, if applicable)).
6. Save the changes to mm\_description\_maint.sql.
7. For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the altered mm\_description\_maint.sql script – A message similar to the following will appear:

```
Job# 165: MM_DESCRIPTION_CTX_IDX Synchronization (every 60 minutes)...  
Job# 166: MM_DESCRIPTION_CTX_IDX Optimization (every 3 days at 00:01)...
```

The Oracle Text index on Vasont’s multimedia description content will now be maintained automatically. Keep in mind, however, that Vasont users’ may not be able to immediately execute an Oracle Text query (in Vasont) against newly added content – New content will only be “picked up” by the Oracle Text index once the synchronization process has been run based on the scheduled job.

## Dropping Oracle Text Indexes on Multimedia Description Content

Oracle Text indexes can be dropped at any time without jeopardizing the integrity of the Vasont Database – Dropping Oracle Text indexes will only affect the availability of the Advanced Text operators in Vasont’s query dialogs.

To drop the Oracle Text index on Vasont’s multimedia description content:

1. For the Oracle instance that houses Vasont, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont

Schema owner and run the following SQL statement:

```
DROP INDEX mm_description_ctx_idx FORCE;
```

The FORCE keyword is required when dropping Oracle Text indexes.

- Utilize the **remove** function, from Oracle's DBMS\_JOB Package, to remove the jobs scheduled to synchronize and optimize the Oracle Text indexes on Vasont's multimedia description content. To determine the jobs to be removed, use the following SQL query:

```
SELECT job
FROM user_jobs
WHERE what LIKE '%MM_DESCRIPTION_CTX%';
```

Which will yield results similar to the following:

```
JOB
-----
165
166
```

The required SQL statements, based on this example, would then be:

```
EXECUTE DBMS_JOB.remove(165);
EXECUTE DBMS_JOB.remove(166);
COMMIT;
```

Where 165 and 166 are the Job numbers obtained from the SQL query executed above – The COMMIT; is required for the Jobs to be completely removed from the Oracle Database.

- Use the **drop\_preference** function, from the Oracle Text CTX\_DDL Package, to remove the Oracle Text storage preference associated with Vasont's multimedia content:

```
EXECUTE CTX_DDL.drop_preference('vasont_mm_description_storage');
```

The Oracle Text index on Vasont's multimedia description content can be rebuilt, at any time, as outlined in the **Indexing Vasont's Multimedia Description Content** section above.

## **Indexing Vasont's Component Annotations**

The procedures in this section will create an Oracle Text index for Vasont's component annotations (the free-form remarks, notes, etc. that can be applied to any component tracked within the CMS). By building this Oracle Text index, queries can be performed using the annotations that are associated with content in Vasont.

## **Creating the Storage Preference for Component Annotations**

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
annotation_index_preference.sql
```

This script will create the Oracle Text storage preference that is used to build and maintain the Oracle Text index on Vasont's component annotations. The preference houses storage information for the Oracle Text tables and indexes, including the Tablespace in which these Objects should be created and their storage characteristics (initial extent size, next extent size, percent increase, etc.).

## Creating the Index for Component Annotations

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
annotation_index_create.sql
```

This script will create the actual Oracle Text index on Vasont's component annotations. The time it takes to build the index will vary depending on the amount of annotations applied in Vasont, but will typically take under an hour depending on the Oracle Server Hardware and Software configuration.

Once the Oracle Text index is built, the Oracle Text operators will automatically appear for use when Annotation properties are selected in Vasont's query dialogs.

## Scheduling the Maintenance of Component Annotation Indexes

For a full discussion on the Oracle Text index maintenance processes and concepts, refer to the Scheduling the Maintenance of Textual Content Indexes section above.

Vasont Systems has provided a simple script for scheduling the synchronization and optimization of the Oracle Text indexes on Vasont's component annotations. This script can be edited by the Oracle Database Administrator and is fairly flexible, allowing the synchronization to be scheduled for every nn minutes (default 45) and the optimization to be scheduled for every nn days (default 2) at a specific time (02:01 (2:01 AM) by default).

If the script provided by Vasont Systems does not meet the desires or needs of the Oracle Database Administrator and/or Vasont users, `annotation_index_maint.sql` can be altered to meet the unique requirements of your Oracle environment.



If the script provided by Vasont Systems is not used, take care to ensure the synchronization and optimization jobs for the Vasont multimedia content index are only scheduled once! Multiple synchronization or optimization jobs can result in degraded system performance (the provided script will prevent duplicate jobs from being submitted).



To utilize the Annotations index maintenance script provided by Vasont Systems, perform the following steps:

1. Open the following script file in a text editor:

annotation\_index\_maint.sql

2. In annotation\_index\_maint.sql, locate the following block of code in the DECLARE section:

```
-----  
-- INDEX OPTIMIZATION FREQUENCY AND TIME VARIABLES --  
-----  
var_sync_minutes VARCHAR2(2000) := '45';  
var_opt_days VARCHAR2(2000) := '2';  
var_opt_time VARCHAR2(2000) := '02:01';
```

3. By default, index synchronization is scheduled to occur every 45 minutes – If a different frequency is desired, change the value for var\_sync\_minutes from 45 to the desired number of minutes.
4. By default, index optimization is scheduled to occur every other day – If a different frequency is desired, change the value for var\_opt\_days from 2 to the desired number of days.
5. By default, index optimization is scheduled to occur at 2:01 AM (02:01) – If a different time is desired, change the value for var\_opt\_time from 02:01 to the desired time (be sure to use “military” time (with a leading zero, if applicable)).
6. Save the changes to annotation\_index\_maint.sql.
7. For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the altered annotation\_index\_maint.sql script – A message similar to the following will appear:

```
Job# 167: ANNOTATION_TEXT_CTX_IDX Synchronization (every 45 minutes) ...  
Job# 168: ANNOTATION_TEXT_CTX_IDX Optimization (every 2 days at 02:01) ...
```

The Oracle Text index on Vasont’s component annotations will now be maintained automatically. Keep in mind, however, that Vasont users’ may not be able to immediately execute an Oracle Text query (in Vasont) against newly added annotations – New content will only be “picked up” by the Oracle Text index once the synchronization process has been run based on the scheduled job.

## Dropping Oracle Text Indexes on Component Annotations

Oracle Text indexes can be dropped at any time without jeopardizing the integrity of the Vasont Database – Dropping Oracle Text indexes will only affect the availability of the Advanced Text operators in Vasont’s query dialogs.

To drop the Oracle Text index on Vasont’s component annotations:

1. For the Oracle instance that houses Vasont, start up *SQL\*Plus* (or *SQL\*Plus Worksheet*), connect as the Vasont Schema owner and run the following SQL statement:



```
DROP INDEX annotation_text_ctx_idx FORCE;
```

The FORCE keyword is required when dropping Oracle Text indexes.

2. Utilize the **remove** function, from Oracle's DBMS\_JOB Package, to remove the jobs scheduled to synchronize and optimize the Oracle Text indexes on Vasont's component annotations. To determine the jobs to be removed, use the following SQL query:

```
SELECT job FROM user_jobs WHERE what LIKE '%ANNOTATION_TEXT_CTX%';
```

Which will yield results similar to the following:

```
JOB
-----
167
168
```

The required SQL statements, based on this example, would then be:

```
EXECUTE DBMS_JOB.remove(167);
EXECUTE DBMS_JOB.remove(168);
COMMIT;
```

Where 165 and 166 are the Job numbers obtained from the SQL query executed above – The COMMIT; is required for the Jobs to be completely removed from the Oracle Database.

3. Use the **drop\_preference** function, from the Oracle Text CTX\_DDL Package, to remove the Oracle Text storage preference associated with Vasont's component annotations:

```
EXECUTE CTX_DDL.drop_preference('vasont_annotation_storage');
```

The Oracle Text index on Vasont's component annotations can be rebuilt, at any time, as outlined in the **Indexing Vasont's Component Annotations** section above.

## **Indexing Vasont's Annotation Attachments**

The procedures in this section will create an Oracle Text index for Vasont's annotation attachments – When annotations are applied to a component in Vasont, the user has the option to attach supporting documents or files. By building this Oracle Text index, queries can be performed against documents (or files) associated with an annotation. For example, queries can be performed in Vasont based on words, phrases, etc. found in Microsoft Word documents, Adobe PDFs, Text files, etc. that are stored with a component's annotations.

## Creating the Storage Preference for Annotation Attachments

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
annotation_attach_index_preference.sql
```

This script will create the Oracle Text storage preference that is used to build and maintain the Oracle Text index on Vasont's annotation attachments. The preference houses storage information for the Oracle Text tables and indexes, including the Tablespace in which these Objects should be created and their storage characteristics (initial extent size, next extent size, percent increase, etc.).

## Creating the Index for Annotation Attachments

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following script file:

```
annotation_attach_index_create.sql
```

This script will create the actual Oracle Text index on Vasont's annotation attachments. The time it takes to build the index will vary depending on the amount of annotation attachments in Vasont, but will typically take under an hour depending on the Oracle Server Hardware and Software configuration.

Once the Oracle Text index is built, the Oracle Text operators will automatically appear for use when Annotation properties are selected in Vasont's query dialogs.

## Scheduling the Maintenance of Annotation Attachments Indexes

Vasont Systems has provided a simple script for scheduling the synchronization and optimization of the Oracle Text indexes on Vasont's annotation attachments. This script can be edited by the Oracle Database Administrator and is fairly flexible, allowing the synchronization to be scheduled for every nn minutes (default 90) and the optimization to be scheduled for every nn days (default 7) at a specific time (03:01 (3:01 AM) by default).

If the script provided by Vasont Systems does not meet the desires or needs of the Oracle Database Administrator and/or Vasont users, `annotation_attach_index_maint.sql` can be altered to meet the unique requirements of your Oracle environment.



If the script provided by Vasont Systems is not used, take care to ensure the synchronization and optimization jobs for the Vasont multimedia content index are only scheduled once! Multiple synchronization or optimization jobs can result in degraded system performance (the provided script will prevent duplicate jobs from being submitted).

To utilize the Annotation Attachments index maintenance script provided by Vasont Systems, perform the following steps:

1. Open the following script file in a text editor:

```
annotation_attach_index_maint.sql
```

2. In `annotation_attach_index_maint.sql`, locate the following block of code in the DECLARE section:

```
-----  
-- INDEX OPTIMIZATION FREQUENCY AND TIME VARIABLES --  
-----  
var_sync_minutes VARCHAR2(2000) := '90';  
var_opt_days VARCHAR2(2000) := '7';  
var_opt_time VARCHAR2(2000) := '03:01';
```

3. By default, index synchronization is scheduled to occur every 90 minutes – If a different frequency is desired, change the value for `var_sync_minutes` from 90 to the desired number of minutes.
4. By default, index optimization is scheduled to occur weekly – If a different frequency is desired, change the value for `var_opt_days` from 7 to the desired number of days.
5. By default, index optimization is scheduled to occur at 3:01 AM (03:01) – If a different time is desired, change the value for `var_opt_time` from 03:01 to the desired time (be sure to use “military” time (with a leading zero, if applicable)).
6. Save the changes to `annotation_attach_index_maint.sql`.
7. For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the altered `annotation_attach_index_maint.sql` script – A message similar to the following will appear:

```
Job# 169: ANNOTATION_ATTACH_CTX_IDX Synchronization (every 90 minutes)...  
Job# 170: ANNOTATION_ATTACH_CTX_IDX Optimization (every 7 days at 03:01)...
```

The Oracle Text index on Vasont’s annotation attachments will now be maintained automatically. Keep in mind, however, that Vasont users’ may not be able to immediately execute an Oracle Text query (in Vasont) against newly added annotation attachments – New content will only be “picked up” by the Oracle Text index once the synchronization process has been run based on the scheduled job.

## Dropping Oracle Text Indexes on Annotation Attachments

Oracle Text indexes can be dropped at any time without jeopardizing the integrity of the Vasont Database – Dropping Oracle Text indexes will only affect the availability of the Advanced Text operators in Vasont’s query dialogs.

To drop the Oracle Text index on Vasont’s annotation attachments:

1. For the Oracle instance that houses Vasont, start up SQL\*Plus (or SQL\*Plus Worksheet), connect as the Vasont Schema owner and run the following SQL statement:

```
DROP INDEX annotation_attach_ctx_idx FORCE;
```

The FORCE keyword is required when dropping Oracle Text indexes.

2. Utilize the remove function, from Oracle's DBMS\_JOB Package, to remove the jobs scheduled to synchronize and optimize the Oracle Text indexes on Vasont's annotation attachments. To determine the jobs to be removed, use the following SQL query:

```
SELECT job
FROM user_jobs
WHERE what LIKE '%ANNOTATION_ATTACH_CTX%';
```

Which will yield results similar to the following:

```
JOB
-----
169
170
```

The required SQL statements, based on this example, would then be:

```
EXECUTE DBMS_JOB.remove(169);
EXECUTE DBMS_JOB.remove(170);
COMMIT;
```

Where 169 and 170 are the Job numbers obtained from the SQL query executed above – The COMMIT; is required for the Jobs to be completely removed from the Oracle Database.

3. Use the **drop\_preference** function, from the Oracle Text CTX\_DDL Package, to remove the Oracle Text storage preference associated with Vasont's annotation attachments:

```
EXECUTE CTX_DDL.drop_preference('vasont_annot_attach_storage');
```

The Oracle Text index on Vasont's annotation attachments can be rebuilt, at any time, as outlined in the Indexing Vasont's Annotation Attachments section above.

## APPENDIX C - Server-Side Processing

Vasont's Server-Side Processing features provide a mechanism where common Vasont processes, such as the loading, cloning and deleting of content, can be performed by the Oracle server (via Java code stored internal to the schema) rather than on the client PC. Typically, the use of Server-Side Processing greatly enhances the performance of these processes by pushing the "work" to the Oracle server, where CPU and Memory resources are much higher. These Server-Side Processing features are run asynchronously from the Oracle server, meaning the user's PC is freed up, and the user can continue working in Vasont, while the process is in progress.

There is also an optional extension, to the Server-Side Processing engine, that allows metadata pertaining to multimedia content to be automatically captured and embedded in the Vasont Content Management System (CMS). As an example, this automated process can capture metadata pertaining to a Microsoft Word document (e.g., Title, Subject, Author, Page Count, etc.) when the Word document is added to the CMS content. Likewise, the automatic process can capture metadata for graphics, such as Color Depth, File Size, Width, Height, etc. Metadata for multimedia objects contained in the CMS is viewable in the Vasont Navigator.



If the Vasont Schema loaded above includes the Vasont Java Classes, there is no need to load the Java Classes at this time. To determine if the Java Classes are already present in the newly loaded Vasont Schema, refer to the instructions in Appendix C – Checking for Vasont Java Classes in the New Vasont Schema.

To load the required Java Classes to the schema, use the procedures outlined in the Vasont Server-Side Processing Configuration section. The Vasont System Administrator will also need to enable the Server-Side processing by applying the appropriate Processing Options (e.g., `server_clone`, `server_delete`, `server_load`, etc.) in the Vasont Administrator application.

## Requirements

To use the Server-Side Processing features with Vasont, your system must meet the following requirements:

For base Server-Side Processing features:

- Oracle 9.2.0.5.0 or higher (Oracle10g Release 2 or higher recommended)
- Oracle JVM feature configured in the Oracle instance housing the Vasont database schema (see **Pre-Configuration Tasks** below)

For Server-Side Processing features, plus optional Metadata Capture extension:

- Oracle 10.2.0.2.0 or higher
- Oracle JVM feature configured in the Oracle instance housing the Vasont database schema (see **Pre-Configuration Tasks** below)

## Checking for Vasont Java Classes in the Vasont Schema

The most reliable method for determining if the Vasont Java Classes are already present in the Vasont Schema (were embedded in the Oracle Export file) is to interrogate the Database Objects in the newly imported Vasont Schema. To check for the existence of the Vasont Java Classes:

1. Start up SQL\*Plus (or SQL\*Plus Worksheet) and connect using the Vasont Schema owner's Oracle account name and password – For the Service, specify the Oracle Service Name used to access the new Vasont Schema.
2. Run the following SQL statement:

```
SELECT Count(*)  
FROM user_objects  
WHERE object_type = 'JAVA CLASS'  
AND Lower(Substr(dbms_java.longname(object_name), 1, 10)) = 'com/vasont';
```

If the returned result is greater than 0, then the Vasont Java Classes are present in the newly imported Vasont Schema.

## Pre-Configuration Tasks

In order to utilize Server-Side Processing, Vasont requires that the Oracle JVM feature be installed and properly configured in the Oracle instance housing the Vasont database schema. Additionally, the Vasont schema owner needs the appropriate Oracle rights to administer and utilize the Oracle JVM features. Steps in this section verify that the Oracle JVM is available and enables its use within the Vasont database schema.



If the Oracle Instance in which the Vasont Schema resides does not pass the verification steps outlined in this section of the, the Vasont System Administrator should remove any existing Server-Side Processing Options (e.g., server\_clone, server\_delete, server\_load, etc.) from the Vasont configuration using the Vasont Administrator application!

## Verify Oracle JVM is Installed in Instance

For the Oracle instance that houses the Vasont database schema, start up SQL\*Plus (or SQL\*Plus Worksheet), connect using the SYS account and run the following SQL Statement:

```
SELECT version, status FROM dba_registry WHERE comp_id = 'JAVAVM';
```

If no rows are returned. The Oracle JVM feature is not installed in the instance housing Vasont. The feature can be added using Oracle's "Database Configuration Assistant" – Refer to your Oracle Documentation for instructions on adding the Oracle JVM feature.

If the VERSION column does not indicate 11.2.0.3 (or higher). Ensure Oracle 11g Release 2 is installed.

If the STATUS column does not indicate VALID. The Oracle JVM feature is not properly installed or configured in your Oracle instance. Refer to your Oracle Documentation, or contact Oracle Support, to rectify the problem before continuing.

## Verify JAVA\_POOL\_SIZE in Instance Initialization Parameters

The amount of shared memory available for Java Applications in the Oracle server (and therefore, for Server-Side Processing) is controlled by Oracle's JAVA\_POOL\_SIZE Initialization Parameter. The value to use for JAVA\_POOL\_SIZE in your Oracle instance depends on whether it is running as a dedicated or shared server:

Oracle Instance Housing Vasont Running In	Minimum JAVA_POOL_SIZE Setting
Dedicated Server Mode	48 MB
Shared Server Mode	64 MB

The JAVA\_POOL\_SIZE Initialization Parameter can be viewed and manipulated using the Oracle Enterprise Manager application. If this tool is not available, refer to your Oracle Documentation for instructions on viewing and changing the Oracle Initialization Parameters. If changes are required to the JAVA\_POOL\_SIZE, and you are using an Oracle spfile to house your Initialization Parameters, be sure that the change is pushed into the spfile so the setting is maintained when the Oracle instance is restarted.

## Installation and Configuration Instructions



All installation and configuration steps for Server-Side Processing are to be performed from the Oracle server, rather than a client PC! This ensures that the Oracle tools required to handle the Vasont Java Classes (that comprise the Server Side Processing) are available – Typically, these tools are only available in an Oracle server software installation.

Additionally, all scripts and utilities for the Server-Side Processing installation and configuration process will be run from a Command Prompt (or Console) window on the Oracle server. This streamlines the installation and configuration process, eliminating the need to jump in and out of a variety of Oracle applications and tools. Certain scripts provided for this process also require the use of the command line Oracle SQL\*Plus application – GUI versions of SQL\*Plus (e.g., SQL\*Plus Worksheet) cannot be used to run the installation scripts.

## Copy Server-Side Processing Resources to the Oracle Server

The first step in the Server-Side Processing installation process is to copy the resources and scripts, provided by Vasont Systems, to a temporary folder on the Oracle server:

1. Go to the Oracle server or access the Oracle server through a console application.
2. Create a temporary directory on the Oracle server (e.g., \Vasont\ServerSideFiles).
3. Copy the contents of the server\_side\_files folder on the Vasont Installer CD-ROM (server\_side\_files is located in the same folder as this document) to the newly created temporary directory.
4. To reduce the possibility of java load errors, ensure that the loadjava.bat file (or loadjava script file, for Unix servers) is copied into the temporary folder on the Oracle server (e.g., \Vasont\ServerSideFiles). Typically, the “loadjava” file is located in the bin folder under the Oracle “Home”.

If you are unable to locate the “loadjava” file in the bin folder, search the contents of your Oracle “Home” – Once you have located loadjava.bat (or the loadjava script file on Unix), place a copy of it in the temporary folder created in step 2 above.

5. From the Oracle server, open a Command Prompt (or Console) window.
6. Change to the temporary directory you created and populated (e.g., cd \Vasont\ServerSideFiles).

The remaining installation and configuration of the Server-Side Processing components will be performed, from the command line, using the contents of the temporary folder.

## Apply Necessary Grants to Vasont Schema Owner

The Server-Side Processing feature requires that the Vasont schema owner has grants to certain Roles (for Java administration) and database objects (e.g., the ability to view and manipulated Oracle Jobs). Additionally, certain Java permissions are required so the Vasont Java Classes can quickly be loaded, compiled and executed.

Vasont Systems has provided a script to automatically apply the required grants and permissions to the Vasont schema owner. To execute this script:

1. From the Command Prompt (or Console) window, start SQL\*Plus and connect using the SYS Oracle Account (with SYSDBA privileges):

```
sqlplus "sys/{SYSPassword}@{ServiceName} AS SYSDBA"
```

Where {SYSPassword} is the Password for your Oracle SYS account and {ServiceName} is the Oracle Service Name used to access the Vasont Database. The double quotes surrounding the connect string allow you to successfully connect SQL\*Plus to the database and specify AS SYSDBA at the same time.



2. Upon successful connection to the database enter the following, at the SQL\*Plus SQL> prompt, to run the grants and permissions script:

```
@server_side_grants
```

3. You will be prompted to specify the Oracle Account Name for the Vasont schema owner:

```
Enter Oracle Account Name for the Vasont Schema Owner :
```

Enter the Oracle account name for the Vasont schema owner (e.g., VASONT) and press Enter.

4. You will be prompted to specify the Host Name for the Oracle server:

```
Enter Host Name for Oracle Server (use * if clustered):
```

Enter the Machine Name for the Oracle server (that you are currently working from) and press Enter.



All If the Vasont database schema resides in an Oracle instance that is clustered, using Oracle's Real Application Clusters (RAC) or another clustering technology, be sure to enter an asterisk (\*) as the Host Name! This ensures that Vasont's Server-Side Processing features operate properly regardless of which cluster node handles the Server-Side Processing job.

5. Finally, you will be prompted to specify the Listener Port for the Oracle instance (that houses the Vasont Database Schema):

```
Enter the Listener Port for Vasont's Oracle Instance :
```

Enter the Listener Port for the Oracle instance and press Enter. If you are unsure of the value to enter, refer to the **listener.ora** file in the **network\admin** folder under your Oracle "Home" – The Listener Port is listed in this file beside the "PORT" parameter.

6. After entering the Listener Port, the script will grant the appropriate Roles and Permissions to the Vasont schema owner. If any errors are indicated, please contact Vasont Systems for assistance.
7. Do not exit SQL\*Plus at this time (it will be used for subsequent steps).

## Stop All Running Server-Side Processing Jobs

The steps in this section ensure that any jobs, that use the Server-Side Processing Java Classes, are stopped before the Java Classes are loaded (or reloaded). This situation will only occur if you are updating the Java Classes for a Vasont database schema where Server-Side Processing is already in use, but it is a good practice and safeguard to complete the steps in this section anyhow:

- At the *SQL\*Plus SQL>* prompt, reconnect to the database as the Vasont schema owner:  
`CONNECT {VasontSchemaOwner}/{VasontSchemaPassword}@{ServiceName}`

Where {VasontSchemaOwner} is the Oracle account name for the Vasont schema owner, {VasontSchemaPassword} is the Password for the Vasont schema owner, and {ServiceName} is the Oracle Service Name used to access the Vasont Database.

- To determine if any Server-Side Processing jobs are current running, run the following SQL statement from the *SQL\*Plus SQL>* prompt and review the results:

```
SELECT job, what FROM user_jobs;
```

- Compare the results of the query to the following table, noting the contents of the WHAT column – This table reflects the action (command) required to shut down each type of job:

If Value in WHAT Column Reflects:	Use the Following Command to Stop the Job(s):
RunAsynchProcessManager();	EXECUTE ShutdownAsynchManager('VASONT');
ASYNCHPROCESSES.INTERNAL_MANAGER_STARTER; and/or ASYNCHPROCESSES.INTERNAL_RUN_MANAGER;	EXECUTE ASYNCHPROCESSES.SHUTDOWN_MANAGER();  NOTE: Multiple copies of INTERNAL_RUN_MANAGER may be running simultaneously. They will each shutdown after they complete any pending tasks. CaptureMetadata(...)
CaptureMetadata(...)	EXECUTE DBMS_JOB.remove({JobNumber}); For {JobNumber}, substitute the job number reflected in the query results (the value in the JOB column)
Other	Job does not need to be stopped

- At the *SQL\*Plus SQL>* prompt, run the appropriate command to stop a RunAsynchProcessManager, ASYNCHPROCESSES and/or CaptureMetadata job that was listed in the query results.
- Repeat step 4 for each additional RunAsynchProcessManager, ASYNCHPROCESSES and/or CaptureMetadata job that was listed in the original query results.
- After stopping all of the RunAsynchProcessManager, ASYNCHPROCESSES and/or CaptureMetadata jobs, issue a commit at the *SQL>* prompt:  
`commit;`
- Repeat steps 2 through 6 until you have confirmed that all RunAsynchProcessManager, ASYNCHPROCESSES and/or CaptureMetadata jobs have been removed from Oracle's job queue.
- Do not exit *SQL\*Plus* at this time (it will be used for subsequent steps).

## Drop Existing Server-Side Processing Java Classes

The steps in this section ensure any existing Vasont Java Classes are dropped from the Vasont database schema prior to loading new or updated Vasont Java Classes. This situation will only occur if you are updating the Java Classes for a Vasont database schema where Server-Side Processing is already in use, but it is a good practice and safeguard to complete the steps in this section anyhow:

1. At the SQL\*Plus SQL> prompt, run the script to delete all existing Java Classes in the Vasont database schema:

```
@dropjava
```

Once the Java Classes are dropped (which may take a few minutes), the following message will appear:

All Vasont Java Objects were successfully dropped...

2. Exit SQL\*Plus (but leave the Command Prompt (or Console) window open):

```
Exit
```

## Load Server-Side Processing Java Classes to the Vasont Schema

The components for Server-Side Processing, consisting of a set of Java Classes, will be physically loaded in the Vasont database schema. This section details the installation of these components.

### Load Java Classes for Base Server-Side Processing Features

The base Server-Side Processing features require a set of Java Classes within the Vasont database schema. These classes are loaded using the Oracle loadjava tool. To simplify the loading of the Vasont Java Classes, Vasont Systems has prepared appropriate script files based on your Oracle server's Operating System. Use the following procedure:

1. You should still be in a Command Prompt (or Console) window on the Oracle server – If not, open a Command Prompt (Console) window and change to the temporary directory you created and populated in section Copy Server-Side Processing Resources to the Oracle Server above (e.g., cd \Vasont\ServerSideFiles).
2. Based on the following table, run the script file based on the Operating System for the Oracle server:

Operating System	Command Line for Running Script File
Windows	fullload.bat {VasontSchemaOwner}/{VasontSchemaPassword}@{ServiceName}
UNIX (HP-UX, Solaris, etc.)	fullload.sh {VasontSchemaOwner}/{VasontSchemaPassword}@{ServiceName}

Where {VasontSchemaOwner} is the Oracle account name for the Vasont schema owner, {VasontSchemaPassword} is the Password for the Vasont schema owner, and {ServiceName} is the Oracle Service Name used to access the Vasont Database.

**NOTE:** The loading of the Java Classes may take up to 5 – 10 minutes, depending on your Oracle server configuration and the current load on the server.

3. If the loading of the Java Classes completes successfully, you will be returned to the command prompt and no errors will appear on the screen.

**NOTE:** If the loading of the Java Classes is not successful, make note of the reported error(s) and contact Vasont Systems for assistance.

4. Do not exit the Command Prompt (Console) window at this time (it will be used for subsequent steps).

### **(Optional) Load Java Classes for Multimedia Metadata Capture**



The Multimedia Metadata Capture extension to Vasont's Server-Side Processing requires Oracle 11.2.0.3 or higher!

The Multimedia Metadata Capture extension to the Server-Side Processing feature requires that an additional set of Java Classes be loaded to the Vasont database schema. These classes are also loaded using the Oracle load java tool. To simplify the loading of the additional Vasont Java Classes, Vasont Systems has prepared appropriate script files based on your Oracle server's Operating System. Use the following procedure:

1. You should still be in a Command Prompt (or Console) window on the Oracle server – If not, open a Command Prompt (Console) window and change to the temporary directory you created and populated in section Copy Server-Side Processing Resources to the Oracle Server above (e.g., cd \Vasont\ServerSideFiles).
2. Based on the following table, run the script file based on the Operating System for the Oracle server:

Operating System	Command Line for Running Script File
Windows	fullloadmm.bat {VasontSchemaOwner}/{VasontSchemaPassword}@{ServiceName}
UNIX (HP-UX, Solaris, etc.)	fullloadmm.sh {VasontSchemaOwner}/{VasontSchemaPassword}@{ServiceName}

Where {VasontSchemaOwner} is the Oracle account name for the Vasont schema owner, {VasontSchemaPassword} is the Password for the Vasont schema owner, and {ServiceName} is the Oracle Service Name used to access the Vasont Database.

**NOTE:** The loading of the Java Classes may take up to 5 – 10 minutes, depending on your Oracle server configuration and the current load on the server.

3. If the loading of the Java Classes completes successfully, you will be returned to the command prompt and no errors will appear on the screen.

**NOTE:** If the loading of the Java Classes is not successful, make note of the reported error(s) and contact Vasont Systems for assistance.

4. Do not exit the Command Prompt (Console) window at this time (it will be used for subsequent steps).

## Compile the Vasont Schema Database Objects and Java Classes

After the Vasont Java Classes are loaded, all of the database objects in the Vasont database schema (including Java Classes, Stored Procedures, Stored Functions and Packages) will need to be recompiled. To recompile the Database Objects:

1. From the Command Prompt (or Console) window, start SQL\*Plus and connect using the SYS Oracle Account (with SYSDBA privileges):

```
sqlplus "sys/{SYSPassword}@{ServiceName} AS SYSDBA"
```

Where {SYSPassword} is the Password for your Oracle SYS account and {ServiceName} is the Oracle Service Name used to access the Vasont Database. The double quotes surrounding the connect string allow you to successfully connect SQL\*Plus to the database and specify AS SYSDBA at the same time.

2. Upon successful connection to the database enter the following, at the SQL\*Plus SQL> prompt, to run the compilation script:

```
@server_side_compile
```

3. You will be prompted to specify the Oracle Account Name for the Vasont schema owner:

Enter Oracle Account Name for the Vasont Schema Owner:

Enter the Oracle account name for the Vasont schema owner (e.g., VASONT) and press Enter.

4. The following message will appear indicating that the Database Objects are being compiled:

```
-----  
This process compiles all the Database Objects  
contained in the Vasont Database Schema...  
THIS COMPILATION PROCESS MAY TAKE A WHILE,  
DEPENDING ON THE NUMBER OF INVALID JAVA CLASSES!  
-----
```

5. Once the compilation process completes, you should see an additional message:

```
-----  
Compilation of Vasont Database Objects complete...  
IF ANY INVALID OBJECTS ARE INDICATED BELOW,  
PLEASE CONTACT VASONT SYSTEMS FOR ASSISTANCE!  
-----  
no rows selected
```

If invalid Database Objects are listed, rather than no rows selected, please note the invalid object types and names and then contact Vasont Systems for assistance!

6. If you loaded the additional Vasont Java Classes for the Multimedia Metadata Capture extension (as outlined in **(Optional) Load Java Classes for Multimedia Metadata Capture** above), and intend to use the Multimedia Metadata Capture feature, do not exit SQL\*Plus at this time and proceed with the steps in the next section.
7. If you do not plan on using the Multimedia Metadata Capture, you can exit SQL\*Plus at this time:

```
exit
```

### **(Optional) Start the Multimedia Metadata Capture Job**

Vasont System has provided an Oracle Procedure, contained in the Vasont Database Schema, to start the Multimedia Metadata Capture job. To start this job:

1. At the SQL\*Plus SQL> prompt, reconnect to the database as the Vasont schema owner:

```
CONNECT {VasontSchemaOwner}/{VasontSchemaPassword}@{ServiceName}
```

Where {VasontSchemaOwner} is the Oracle account name for the Vasont schema owner, {VasontSchemaPassword} is the Password for the Vasont schema owner, and {ServiceName} is the Oracle Service Name used to access the Vasont Database.

2. Start the Multimedia Metadata Capture job by entering the following at the SQL\*Plus SQL> prompt:

```
EXECUTE StartCaptureJob(1);
```

3. You should see the following message:

```
PL/SQL procedure successfully completed.
```

4. Exit SQL\*Plus:

```
Exit
```

### **Post-Configuration Tasks**

The installation and configuration of Vasont's Server-Side Processing features are now complete. If so desired, you can now remove the temporary folder, and its contents, that was created and populated in the Copy Server-Side Processing Resources to the Oracle Server section above.

## APPENDIX D - Vasont Email Capabilities

### *Procedures for Using Vasont E-Mail*

#### Oracle Setup Procedures

When a user submits an E-mail using the Vasont application, it is transmitted to the appropriate recipient via the Oracle UTL\_SMTP and UTL\_TCP packages. Consequently, your DBA needs to assure that these packages are installed in your Oracle instance.

The original, general Vasont email capability (clicking a button to send an email, Workflow Task send\_mail PO, etc.) was written some time ago and solely uses a built in Oracle package called UTL\_SMTP. Evidently, this does not require the ACLs...

The newer “subscription” for notification emails, however, is fairly recent, relies on Oracle jobs and utilizes some additional Oracle packages (UTL\_TCP for one). The ACLs DO come into play here!

#### Special Procedures for Oracle 11g

Beginning with Oracle 11g enhanced security features within Oracle require an Access Control List (ACL) for any network communications. ACLs are maintained in the XML DB portion of the Oracle database. The first step in enabling an ACL for Vasont network communications is to install XML DB into the database. See <http://www.oracle.com/technology/tech/xml/xmlldb/index.html> for details on this process.

Once XML DB has been successfully installed, have your Oracle DBA follow these steps:

1. Login to *SQL+ or SQL+ Worksheet* as SYS
2. Create the ACL

```
begin
DBMS_NETWORK_ACL_ADMIN.CREATE_ACL(
acl => 'vasontnetacl.xml',
description => 'Network connection permissions for Vasont Schema Owner',
principal => 'PUBLIC',
is_grant => TRUE,
privilege => 'connect',
start_date => null,
end_date => null);
end;
```

3. Give the user (or role) the privilege to use the package. Note that the DBA must replace the {} with the Vasont Schema owner:

```
begin
DBMS_NETWORK_ACL_ADMIN.ADD_PRIVILEGE(
acl => 'vasontnetacl.xml',
principal => '{Schema Owner Name Here}',
is_grant => TRUE,
privilege => 'connect',
position => null,
start_date => null,
end_date => null);
end;
```

4. Assign the ACL to the mail server. Note that the DBA must replace the {} with the mail server name. The "host" value must EXACTLY match SMTP\_SERVER defined in Vasont Administrator System Profiles dialog (including case convention):

```
begin
DBMS_NETWORK_ACL_ADMIN.ASSIGN_ACL(
acl => 'vasontnetacl.xml',
host => '{Email Server}',
lower_port => 25,
upper_port => 25);
end;
```

5. Grant execute for the user on utl\_tcp. Note that the DBA must replace the {} with the Vasont Schema owner:

```
grant execute on utl_tcp to {Vasont schema owner name - all in caps}
```

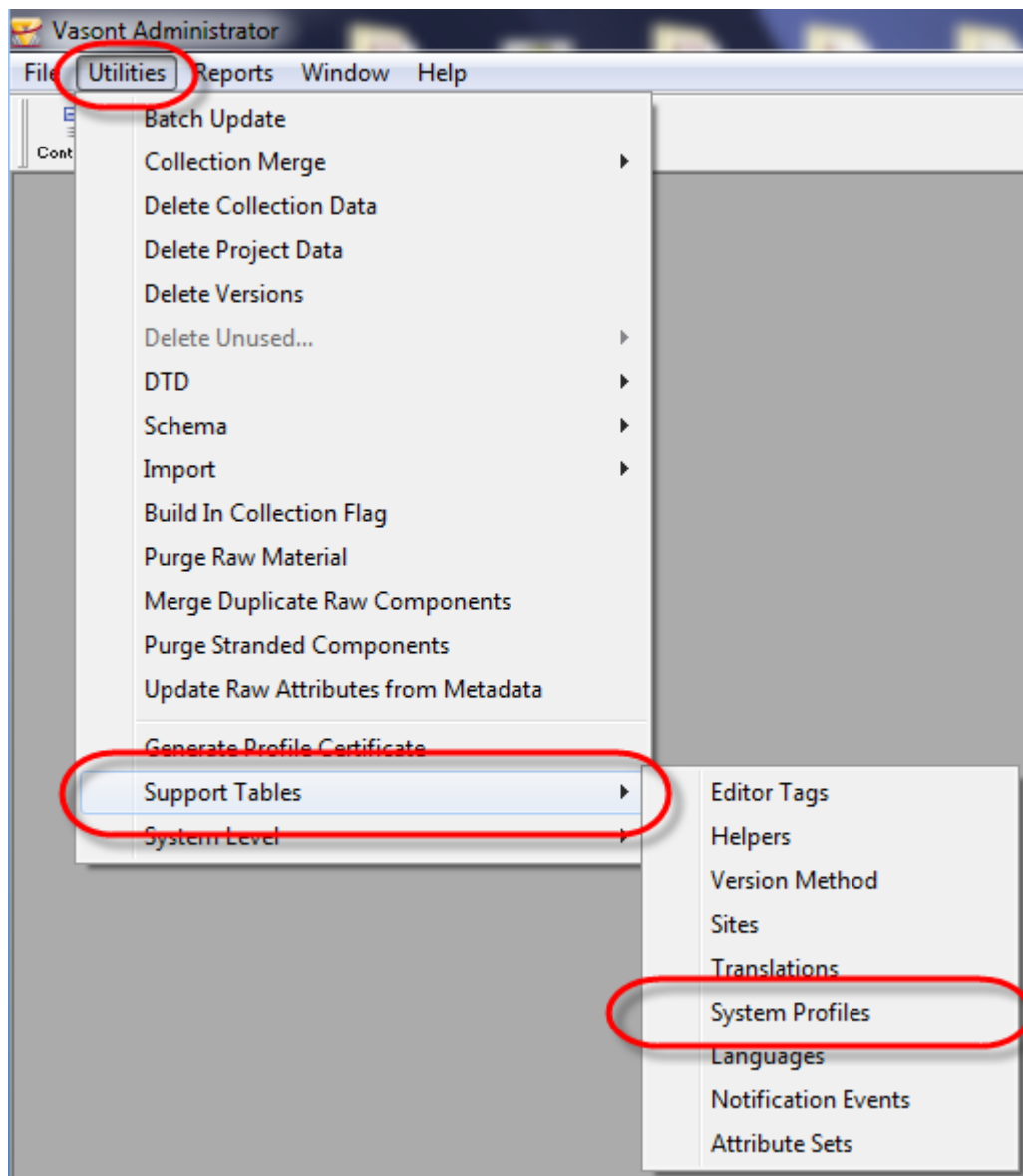
6. Execute the commit command Commit;

```
commit;
```

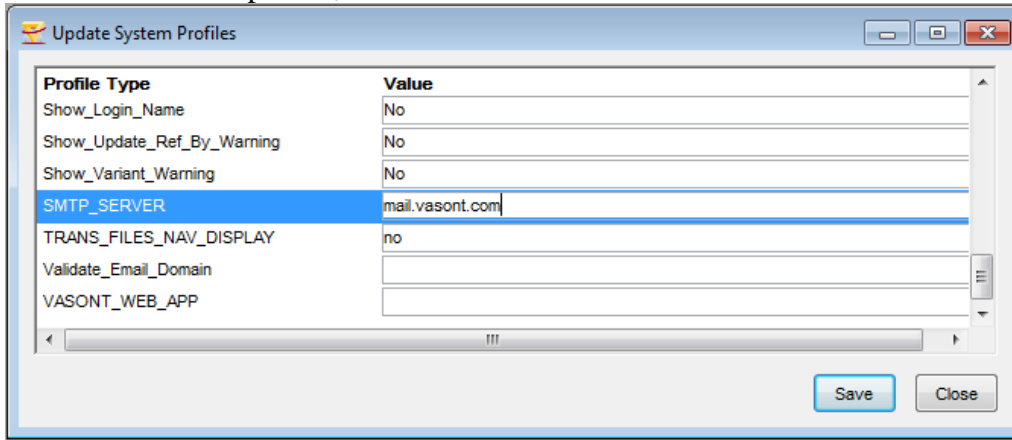


## Vasont Setup Procedure

In Vasont Administrator use the System Profiles update function. This update process can be accessed from the Vasont Administrator's main toolbar by clicking on the Utilities/Support Tables/System Profiles menu:



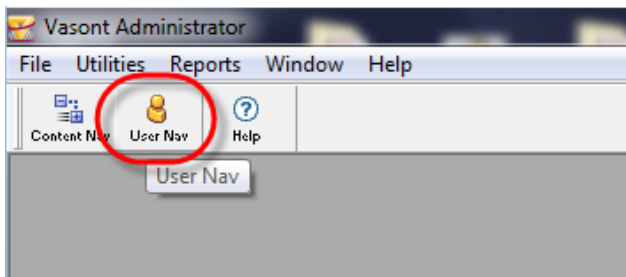
An update window displays and values can be entered, as needed. The SMTP\_SERVER value box represents the mail server and can be updated, if needed.



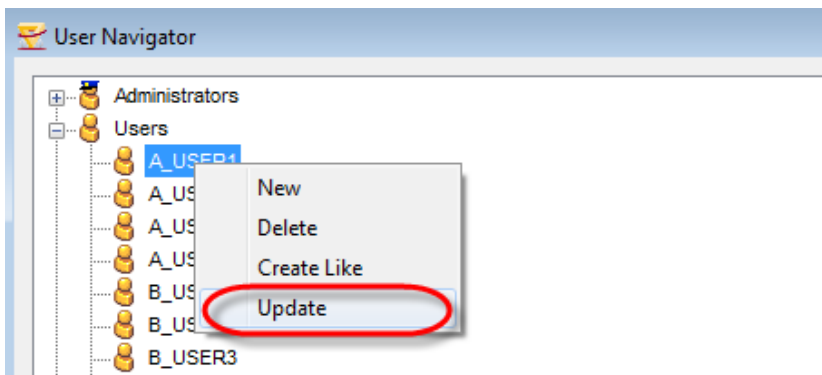
## Setting up Email for individual Vasont Users

Each user that will receive or send email from within Vasont should be setup with an email address in the Vasont Administrator.

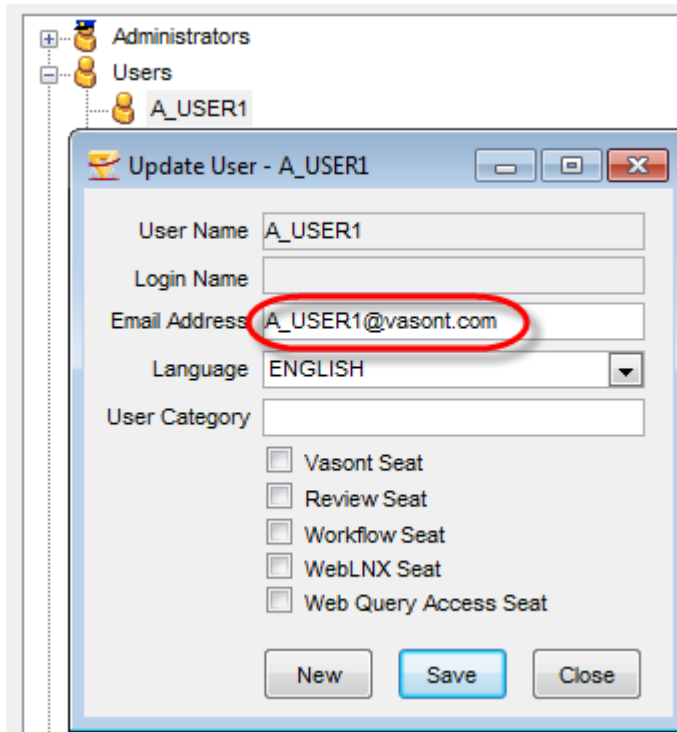
1. Click on the User Nav button on the toolbar:



2. In the User tree expand the Users node. Right-click on each user and choose Update from the popup menu:



3. When the user update window appears, enter a valid email address for the user and click Save:



4. Follow steps 2 and 3 for the remaining users.

## APPENDIX E - Vasont LDAP Authentication Feature

### Overview

*Vasont*, *Vasont Administrator* and the *Vasont API* (henceforth referred to collectively as “Vasont”) have historically supported only one method of user authentication, Oracle user accounts. As of Vasont Release 10, directory services authentication in the form of LDAP is also supported. This document outlines various aspects of LDAP support in Vasont and is targeted at System Administrators responsible for LDAP administration and integration.

### Advantages

With LDAP support, Vasont can be more easily integrated into large corporate environments where user account management is centralized. This will eliminate duplicate user maintenance efforts on the part of System Administrators, and will also ensure that Vasont users are not encumbered with having to remember multiple passwords (e.g., their network password and a different Vasont password) for their daily tasks. Integration into an LDAP environment is as simple as adding several parameters to the Vasont initialization file and implementing a Vasont certificate file for each Database Profile used to access the Vasont database schema. Vasont Systems has also kept in mind the security needs of large organizations by supporting LDAP authentication over Secure Sockets Layer (SSL).

### Behavior

With LDAP authentication enabled, it can safely be assumed that the user logged into the network will be the same user logging into Vasont, so the **Login** entry field on the *Vasont*, *Vasont Administrator* and *Vasont Universal Integrator (VUI)* login windows will be pre-populated with the network username – The **Login** entry field can be changed, however, if required. Since the **Login** entry field is automatically populated, the cursor is initially placed in the **Password** entry field.

Once the username and password have been entered and the user has pressed the **OK** button on the login window, LDAP authentication is performed using a two step process. The first step in the LDAP authentication process performs an LDAP search to ascertain the Distinguished Name (DN) for the username entered in the Login entry field. This search is performed relative to a search base (entry point into the LDAP hierarchy) and using a search scope, both of which are defined in the Vasont initialization file, **VasontApps.ini** (see **Setting the LDAP Parameters in VasontApps.ini** below). The LDAP search operation can be performed over an anonymous LDAP connection (if your LDAP environment allows anonymous searches) or using an SSL secured "service account". For the latter, the service account information must be included during the Vasont Certificate generation process performed in *Vasont Administrator* (see **Generating Vasont Certificates** below).

After the DN has been ascertained for the username entered in the **Login** entry, the second step of the LDAP authentication process is performed. During this step, the user's DN and the **password** entered for the Password entry field are used to reconnect ("bind") to the LDAP server over an SSL secured connection (this second step is always performed over a secure SSL connection). If the connection is successful using the user's DN and password, the authentication process is complete and login to the Vasont application continues. If the connection is not successful an error will be raised and reported to the user.

Regardless of whether authentication is performed via LDAP or Oracle, the final connection to the Vasont database schema is established using a master Oracle account (the Oracle credentials for the "owner" of the Vasont database schema objects). When Oracle authentication is used, the Vasont Schema Owner account information is obtained internally from the Vasont database schema (after the users' Oracle account is authenticated). When using LDAP authentication, however, Oracle connectivity is not established until after the authentication process, so an external means of obtaining the Vasont Schema Owner account information is therefore required.

When using LDAP authentication, the Vasont Schema Owner account information is obtained from a Vasont certificate file that is generated by a System Administrator and installed on each PC or server hosting Vasont applications. Because different Vasont Schema Owner account information is needed for each Vasont database schema available to the users, a Vasont certificate is required for each Database Profile (with which LDAP authentication will be used) defined in the Vasont initialization file. More details regarding the configuration of the Vasont initialization file, the generation of Vasont certificate files and the installation of Vasont certificates on host PCs or servers will appear later in this document.

As a final step in the authentication process, regardless of whether LDAP or Oracle authentication is in use for a Database Profile, the supplied username (**Login**) is verified to be a valid Vasont user. Vasont users and the rights they have within the system are maintained by the Vasont System Administrator using the Vasont Administrator application.

## **Prerequisites**

The following third-party controls and certificates are required in order to use LDAP authentication on every PC or server hosting Vasont applications.

### **ActiveX LDAP Client**

An ActiveX control, the ActiveX LDAP Client, must be installed on every PC or server that hosts Vasont applications. This control provides routines to perform searches within LDAP directories as well as authenticate (over SSL) usernames and passwords.

Vasont Systems will provide the ActiveX LDAP Client on request.

Once the ActiveX LDAP Client is provided by Vasont Systems, it should be installed on each PC or server that will use LDAP authentication with Vasont.

### **SSL Certificate**

When using LDAP authentication, Vasont will always authenticate the supplied username and password securely (via SSL); this ensures that user passwords are never sent across the network “in the clear” by Vasont applications. Since the SSL connection will be negotiated between the LDAP server and client PC or server (hosting Vasont), a Server Certificate allowing SSL access to the LDAP server must be installed on the PCs or servers hosting Vasont applications.

Server certificates are issued by Certificate Authorities (CA) such as Thawte, VeriSign, or GeoTrust. If secure LDAP authentication is already being used for other network services, a server certificate most likely already exists so no further action is needed. If a host PC or server has not already been configured for LDAP authentication, or if you are unsure whether the required certificate is installed, contact your LDAP System Administrator or consult your LDAP server documentation for further guidance.

## **Vasont Certificate Installation and LDAP Configuration**

This section discusses the concept of Vasont certificates and the LDAP parameters needed for authentication. One key issue to remember is that each Vasont certificate is associated with a single Database Profile defined in the Vasont initialization file, **VasontApps.ini**. Since a given Database Profile defines the connection parameters for a single

Vasont database schema (e.g., “Production”), in environments where multiple Vasont database schemas are present, think of the Vasont certificate file as a logical extension to that Database Profile.

Likewise, the LDAP parameters required to access and authenticate against an LDAP server are Database Profile specific. It is therefore feasible to use different LDAP servers for different Database Profiles (Vasont database schema connections). Additionally, it is feasible to use LDAP authentication in conjunction with one Database Profile, but use Oracle authentication for another. Both the Vasont certificates and LDAP parameters were associated with individual Database Profiles to maximize flexibility with the authentication options.

When proceeding with the steps outlined in the following sections, be sure to generate and install the certificate file(s) before adding the LDAP parameters to the initialization file. Otherwise, Vasont may try to authenticate with LDAP before all the steps are complete. Should this occur, simply remove any LDAP-related parameters from the Vasont initialization file; this action will cause Vasont to revert to the standard (Oracle) authentication mode.



Please verify that Vasont has already been installed, on the host PCs or servers, before proceeding with the Vasont Certificate installation and LDAP configuration processes! The applications and processes referenced in the following sections require that Vasont has already been installed on the PCs and/or servers.

## Special Considerations for Terminal Services or Citrix

As noted above, the Vasont certificate files and LDAP parameters are associated with individual Database Profiles in the Vasont initialization file, **VasontApps.ini**. In Terminal Services or Citrix environments, the server administrators may have opted to “publish” user-specific (or group-specific) **VasontApps.ini** files during login to the Terminal Services or Citrix server. If this is the case, the server administrators must take action to ensure:

- **VasontApps.ini** changes to implement LDAP authentication are ultimately propagated to the appropriate Terminal Services or Citrix users
- The Terminal Services or Citrix users have access to the folder (or folders) in which the Vasont certificate files are stored
- If multiple divisions, departments or groups utilize the same Terminal Services or Citrix server, but have separate Vasont database schemas, that there are no conflicts with the Vasont certificate filenames and/or folders

To clarify the latter action item, consider an environment where the “User Documentation” and “Parts” departments share a Terminal Services/Citrix server and each have a Database Profile called “Production”, but the “Production” Database Profiles point to separate Oracle servers or instances (in this case, distinct and custom **VasontApps.ini** files would have to be pushed to the appropriate department’s users). Care must be taken to ensure that each department’s Certificate file has a distinct filename or are stored in different folders. Otherwise, one department could end up using the other department’s Certificate file and the Oracle connection may fail (because the Certificate files contain additional details that are specific to the Vasont database schema).

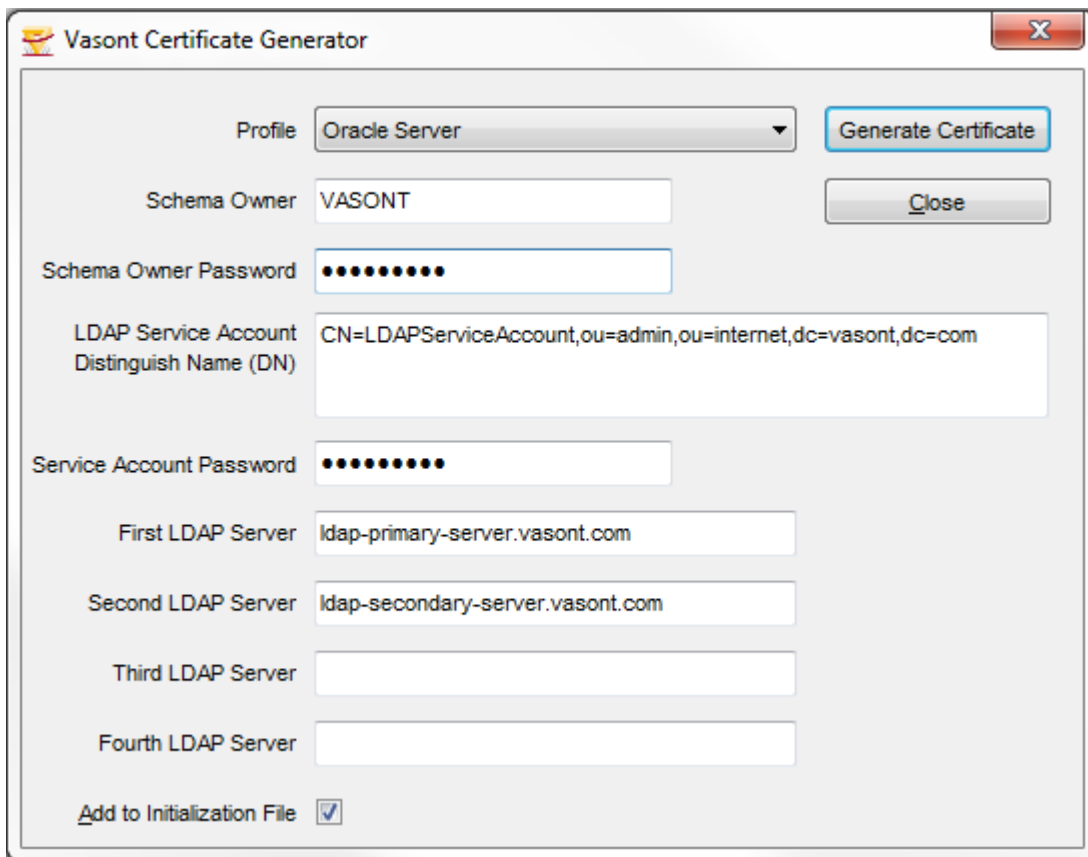
Both the Vasont certificate generation and installation processes provide an opportunity to change the certificate filename (initially derived from the Database Profile name) and change the location (folder) in which the certificate file is stored. In situations where multiple divisions, departments or groups all run from a single Terminal Services or Citrix server, Vasont Systems recommends that each groups certificate files be “partitioned” by filename or folder.

## Generating Vasont Certificates

A key security feature of LDAP authentication is that of Vasont certificate files. These files contain additional authentication information, required to establish connectivity to the Vasont database schema in Oracle, which would be normally retrieved from the database when authenticating against Oracle. Since an Oracle connection is not required (or available) during LDAP authentication, however, this additional authentication information must be available “external” to the database – Vasont certificate files provide the mechanism to store this additional authentication information externally and securely.

To generate a Vasont certificate file:

1. Start Vasont Administrator, select a Database Profile and then log in using the Oracle credentials for the Vasont Schema Owner (the Oracle username and password for the "owner" of the Vasont database schema objects).
2. From the Vasont Administrator menus, select the **Utilities** → **Generate Profile Certificate** option – The following dialog will appear:



The image shows a screenshot of the "Vasont Certificate Generator" dialog box. The dialog has a title bar with the Vasont logo and the text "Vasont Certificate Generator". Inside the dialog, there are several fields and buttons. At the top, there is a "Profile" dropdown menu set to "Oracle Server" and a "Generate Certificate" button. Below this is a "Schema Owner" text field containing "VASONT" and a "Close" button. The "Schema Owner Password" field is masked with dots. The "LDAP Service Account Distinguish Name (DN)" field contains the text "CN=LDAPServiceAccount,ou=admin,ou=internet,dc=vasont,dc=com". Below this is a "Service Account Password" field, also masked with dots. There are four text fields for LDAP servers: "First LDAP Server" (ldap-primary-server.vasont.com), "Second LDAP Server" (ldap-secondary-server.vasont.com), "Third LDAP Server" (empty), and "Fourth LDAP Server" (empty). At the bottom, there is a checkbox labeled "Add to Initialization File" which is checked.

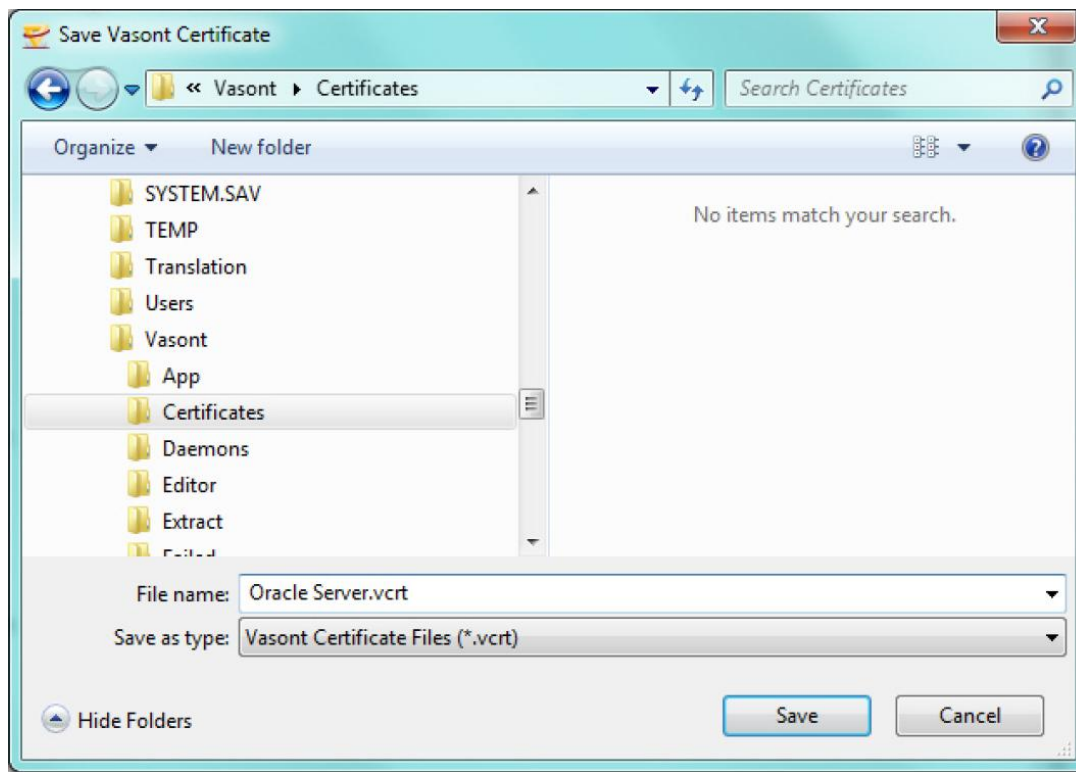
3. For **Profile**, select a Database Profile for which a Vasont certificate is to be generated.
4. For **Schema Owner**, enter the Oracle username (for the "owner" of the Vasont database schema objects) for the Vasont database schema that will be accessed via the selected **Profile**.
5. For the **Schema Owner Password**, enter the password for the Oracle account specified in step 4.
6. If your LDAP environment supports anonymous connections and searching of the LDAP hierarchy, you can leave the **LDAP Service Account Distinguished Name (DN)** empty. If secure connections to LDAP are required (or desired) during the LDAP search, enter the full DN for the "service account" that will be used to search the LDAP hierarchy.
7. For anonymous connections and searching, leave the **Service Account Password** empty. If the **LDAP Service Account Distinguished Name (DN)** was specified, enter the appropriate password for the "service account" defined.
8. For the Server parameters, enter up to four (4) LDAP servers to attempt to contact for authentication. Vasont will attempt to contact each in order until a server authenticates the user or the end of the list is reached. Each entry can be either an IP address or hostname.
9. If you want the generator to automatically associate the generated Vasont certificate file with the selected **Profile** (in other words, update the Database Profile in **VasontApps.ini**), ensure the **Add to Initialization File** checkbox is checked. If the checkbox is cleared, a certificate will be generated but the **VasontApps.ini** initialization file will not be altered.

**NOTE:**

For Terminal Services or Citrix environments, this option provides a handy method for installing the certificate automatically (as part of the generation process). The Terminal Services or Citrix administrator is still responsible, however, for ensuring that the **VasontApps.ini** changes are propagated to the proper users or groups.

10. Click the **Generate Certificate** button – The supplied Oracle credentials will be verified with the Oracle database (accessed via the selected **Profile**) and the Vasont schema ownership will be tested. If any errors occur, an error message will be displayed.
11. Once it has been confirmed that the supplied credentials match the selected **Profile**, and that the credentials are indeed for the Vasont Schema Owner, you will be prompted to save the generated certificate file:





**NOTE:** For Terminal Services or Citrix environments, this dialog provides an opportunity to rename the certificate file or store the certificate file in an alternate location.

12. If desired, the location for the certificate file or the certificate filename can be changed (the default location for Vasont certificate files is the **Certificates** folder under the Vasont Home) – When satisfied with the location and filename, click the **Save** button.
13. A confirmation message will appear, indicating the location and filename for the generated certificate, along with the Database Profile to which it is associated. Click **OK** to acknowledge the message – You will automatically be returned to the main Certificate Generator dialog.
14. If additional Database Profiles are available, and you need to generate Vasont certificate files for those Profiles, repeat steps 3 through 10.
15. When done generating Vasont certificate files, click **Close** to exit the Certificate Generator dialog.

The Vasont certificate files generated by this process can be readily distributed to all Vasont users (for subsequent installation) via a network share, FTP, E-Mail, etc. (this would be the typical mode of distribution in a traditional Client/Server Vasont environment). If this deployment mechanism is used, be sure to forward instructions to the Vasont users regarding the Vasont certificate file installation (as outlined in the following section).

**NOTE:** In traditional Client/Server Vasont environments, each Vasont user will also need their **VasontApps.ini** file updated to include the LDAP parameters required for LDAP authentication. The System Administrators will need to develop a plan for communicating these initialization file changes, or deploying the altered initialization file, to each Vasont user.

## Installing Vasont Certificates

Once a Vasont certificate file has been generated, it must be installed on each PC or server that hosts Vasont applications and will utilize LDAP authentication (assuming the certificate was not already installed on the PC or server using the **Add to Initialization File** option in the Certificate Generator dialog). As noted in the prior section, these certificate files can safely be deployed to the Vasont users (for installation on their PC) via a network share, FTP, E-Mail, etc. Be sure to forward the users a copy of the instructions from this section, along with a description of the Vasont certificate files and their relationship to the user's Database Profiles, if using this deployment method.

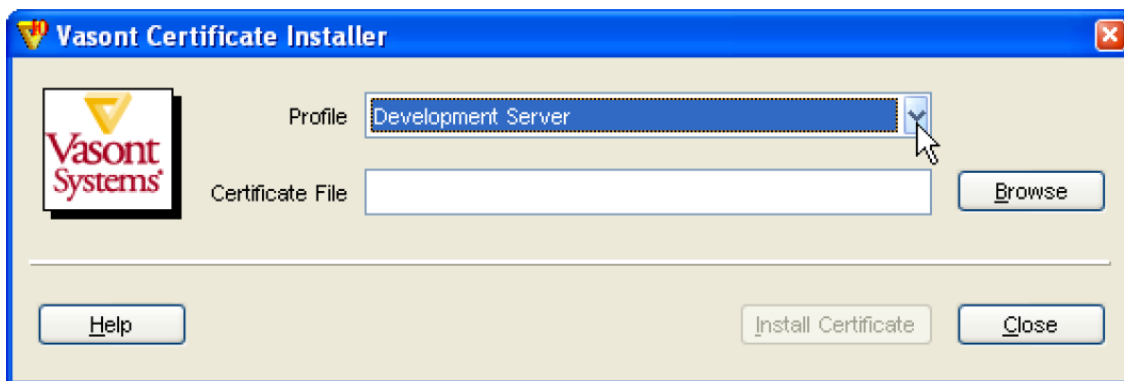
To install Vasont certificates for use on PCs or servers hosting Vasont applications:

1. On the PC or server, select **start** → **Run** from the Windows Taskbar and then click the **Browse...** button.
2. From the Browse dialog, navigate to (and open) the following application:

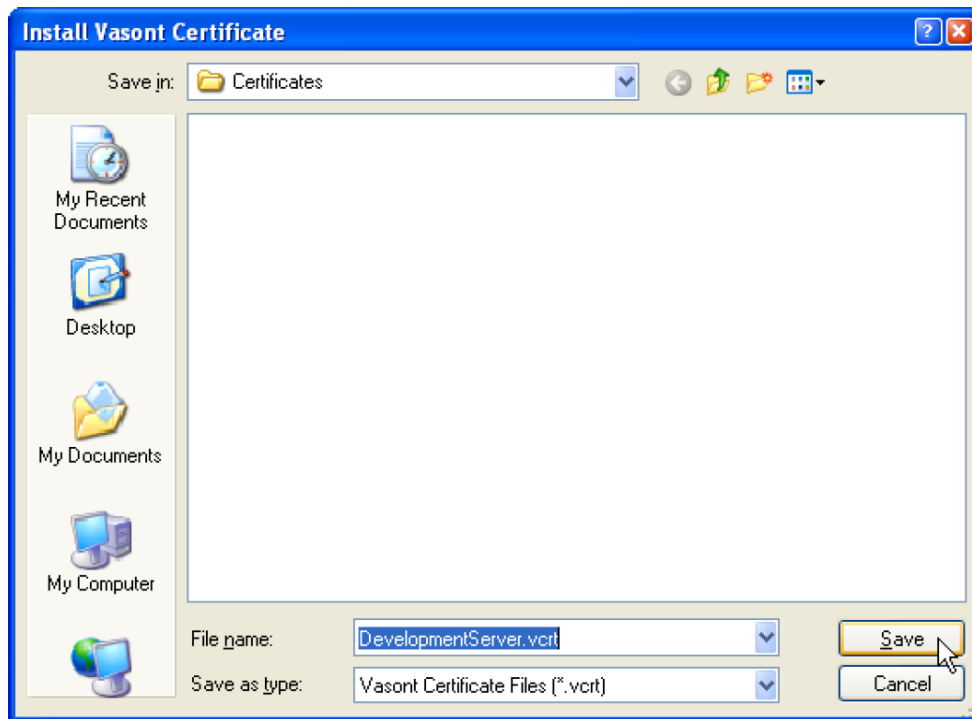
`{VasontHome}\App\InstallVasontCertificate.exe`

where {VasontHome} is the installation location for Vasont on the PC or server (typically **C:\Vasont**).

3. Back at the **Run** dialog, click the **OK** button to start the Certificate Installer application – The following dialog will appear:



4. For Profile, select the Database Profile for which the Vasont certificate is to be installed.
5. For Certificate File, type the path and filename for (or use the Browse button to locate) the Vasont certificate file to be installed for the selected Profile.
6. Click the Install Certificate button – The Vasont certificate will be verified against the Oracle database (accessed via the selected Profile). If any errors occur, an error message will be displayed.
7. Once it has been confirmed that the Vasont certificate matches the selected Profile, you will be prompted to install the certificate file locally on the host PC or server:



8. If desired, the location for the certificate file or the certificate filename can be changed (the default location for Vasont certificate files is the Certificates folder under the Vasont Home) – When satisfied with the location and filename, click the Save button.
9. A confirmation message will appear indicating that the Certificate was successfully installed for the Database Profile. Click OK to acknowledge the message – You will automatically be returned to the main Certificate Installer dialog.
10. If additional Database Profiles are available, and you need to install Vasont certificate files for those Profiles, repeat steps 4 through 9.
11. When done installing Vasont certificate files, click Close to exit the Certificate Installer dialog.

## Maintaining Vasont Certificates

Once generated and installed, Vasont Certificate files will not typically need to be changed. If the Oracle credentials are changed (e.g., the password) for a Vasont Schema Owner, a new Certificate file will need to be generated, deployed and installed for the affected Database Profile.

It is also worth noting that the “installation” of a Vasont certificate is really a simplistic link between a Database Profile in VasontApps.ini and a Vasont certificate file that is available to the PC or server on the file system. Specifically, a Database Profile entry in VasontApps.ini looks similar to the following:

```
[Profile Development Server]
DBMS=O90 Oracle 11g
ServerName=VasontDev
Database=
UserID=&userid
DatabasePassword=&password
LogID=&userid
LogPassword=&password
Lock=
DbParm=Async=1, Timestamp=0, BindSPInput='Yes '
AutoCommit=0
Role=
RolePassword=
AuthenticationMode=LDAP
CertificateFile=C:\Vasont\Certificates\DevelopmentServer.vcrt
LDAPSearchBase="ou=people,ou=intranet,dc=vasont,dc=com"
LDAPUsernameAttribute=sAMAccountName
```

Note the `CertificateFile` key, which indicates that the Vasont certificate file **DevelopmentServer.vcrt** (located in the **C:\Vasont\Certificates** folder) should be used to establish database connectivity to the Vasont database schema associated with the **Development Server** profile.

## Setting the LDAP Parameters in VasontApps.ini

There are several settings, implemented in the Database Profile sections of the Vasont initialization file (**VasontApps.ini**), that are used by Vasont's LDAP authentication process in Vasont. Some of these settings are required, but most are optional (and can rely on default LDAP behaviors).

The following settings are required for each Vasont Database Profile that will utilize LDAP authentication:

- **AuthenticationMode** – In order to perform LDAP authentication when a Database Profile is used, that Database Profile section must have the **AuthenticationMode** key set to **LDAP**. If the **AuthenticationMode** key is not provided, or its value is empty, Vasont will use Oracle authentication when connecting using the Database Profile.
- **LDAPSearchBase** – Specifies the starting point, or base, from which the search for the supplied username will be performed. The value for this parameter in **VasontApps.ini** *should be quoted (double quotes) to ensure any embedded spaces are not misinterpreted!*

The following settings are optional for each Vasont Database Profile that will utilize LDAP authentication, but may be required to successfully deploy LDAP authentication in your environment:

- **LDAPUsernameAttribute** – When searching for the users information in the LDAP directories, Vasont will (by default) use the LDAP attribute “uid” for the search filter (e.g., “uid=jholman”). With some LDAP implementations, the “uid” attribute is not implemented so an alternate attribute (for the user) may be required.
- The **LDAPUsernameAttribute** key within a Database Profile indicates the alternate attribute that should be used during the LDAP directory search. As an example, some LDAP implementations may utilize an attribute called “sAMAccountName” – In this case, the following **VasontApps.ini** setting (for a Database Profile) could be used:

```
LDAPUsernameAttribute=sAMAccountName
```

As a result, Vasont will utilize a search filter similar to “sAMAccountName=jholman” when performing the LDAP directory search.

- **LDAPSearchScope** – Specifies how deep in the directory the search for the supplied username will go. Possible values are **base**, **one**, or **subtree** – If unspecified, the default search scope will be **subtree**.
- **LDAPPort** – Specifies the port (non-secure) that will be used to connect to the LDAP server and search for the supplied username. If unspecified, the default port is 389.
- **LDAPSSLPort** – Specifies the secure (SSL) port that will be used to connect to the LDAP server and verify the supplied username and password. If unspecified, the default SSL port is 636.

The following setting is obsolete and can be removed from the Database Profile sections in your **VasontApps.ini** file if it is still present:

- **LDAPServer**

Apply these parameters (with the appropriate values unique to your LDAP environment) to each Database Profile section, in **VasontApps.ini**, for which LDAP authentication should be used. The following is an illustration of a sample Database Profile section from **VasontApps.ini** configured for LDAP authentication:

```
[Profile Development Server]
DBMS=O90 Oracle 11g
ServerName=VasontDev
Database=
UserID=&userid
DatabasePassword=&password
LogID=&userid
LogPassword=&password
Lock=
DbParm=Async=1, Timestamp=0, BindSPInput='Yes '
AutoCommit=0
Role=
RolePassword=
AuthenticationMode=LDAP
CertificateFile=C:\Vasont\Certificates\DevelopmentServer.vcrt
LDAPSearchBase="ou=people,ou=intranet,dc=vasont,dc=com"
LDAPUsernameAttribute=sAMAccountName
```

When a user logs in to a Vasont application using the **Development Server** Database Profile, LDAP authentication will be used. The LDAP search for the username will be performed against the list of servers found in the certificate file, starting from the (**LDAPSearchBase**) `ou=people,ou=intranet,dc=vasont,dc=com` base and using port 389 (**LDAPPort** is not specified, so the default non-secure port of 389 is used). The entire subtree will be searched because the **LDAPSearchScope** is not supplied and the default scope is “subtree”.

When the user’s password is ultimately authenticated, a connection will be established to the LDAP server on the secure (SSL) port 636 (**LDAPSSLPort** is not specified and 636 is the default SSL port for password verification).

Currently, all LDAP related parameters must be applied to **VasontApps.ini** “by hand”. This task can be performed by the System Administrators or the actual Vasont users (assuming the System Administrators have confidence that the Vasont end-users have enough technical savvy to complete the task). For Terminal Services or Citrix environments, it will be the Terminal Services/Citrix administrator’s responsibility to apply the **VasontApps.ini** LDAP parameters and ensure that the proper **VasontApps.ini** is deployed for the user during login.

## Troubleshooting

During log in to the Vasont applications, all LDAP authentication errors are trapped and reported to the user. The following is list of the errors that could occur, along with a description of the problem and corrective action required:

- “Failed to instantiate the ActiveX LDAP Client...”

**Problem:** The required third-party LDAP control has not be procured from the vendor and/or installed on the host PC or server.

**Action:** Ensure that the ActiveX LDAP Client has been procured from LDAP Services (see the ActiveX LDAP Client section above). If so, install the ActiveX LDAP Client on the host PC or server experiencing the problem.

- “A failure occurred while establishing an Anonymous connection to the LDAP Server...”

**Problem:** The server specified in the Vasont Certificate or is not listening on the non-secure port.

**Actions:** If the LDAPPort parameter is not specified for the Database Profile in VasontApps.ini, verify the LDAP Server is listening on port 389 and that 389 is not a secure (SSL) port.

If the LDAPPort parameter is specified for the Database Profile in VasontApps.ini, verify the LDAP Server is listing on that port and the port is not secured using SSL.

- “A failure occurred while executing the LDAP Search...”  
“A failure occurred while obtaining the Entries from the LDAP Search...”

**Problem:** An error, internal to the ActiveX LDAP Client control, occurred when searching for the username in the LDAP server’s directory structure.

**Action:** Contact Vasont Systems for assistance – Be sure to provide the full error message to assist in troubleshooting.

- “Invalid Login -- The LDAP Search returned X entries...”

**Problem:** The LDAP search failed to find a single Distinguished Name (DN) for the username provided during login – More than one entry was found for the username.

**Action:** This error would be symptomatic two or more CN entries, that match the username, in the LDAP server’s directory (CNs are assumed to be unique by the Vasont LDAP authentication) – Consult the LDAP system administrators.

- “Invalid Login -- The LDAP Search failed to find an entry...”

**Problem:** The LDAP search failed to find locate a Distinguished Name (DN) for the username provided during login.

**Action:** If the Vasont user is a new user, ensure that the appropriate entries have been added to the LDAP server for the new user. Otherwise, this message would indicate that an invalid username was used.

## APPENDIX F - Installation Instructions for Oracle ODP.NET Drivers

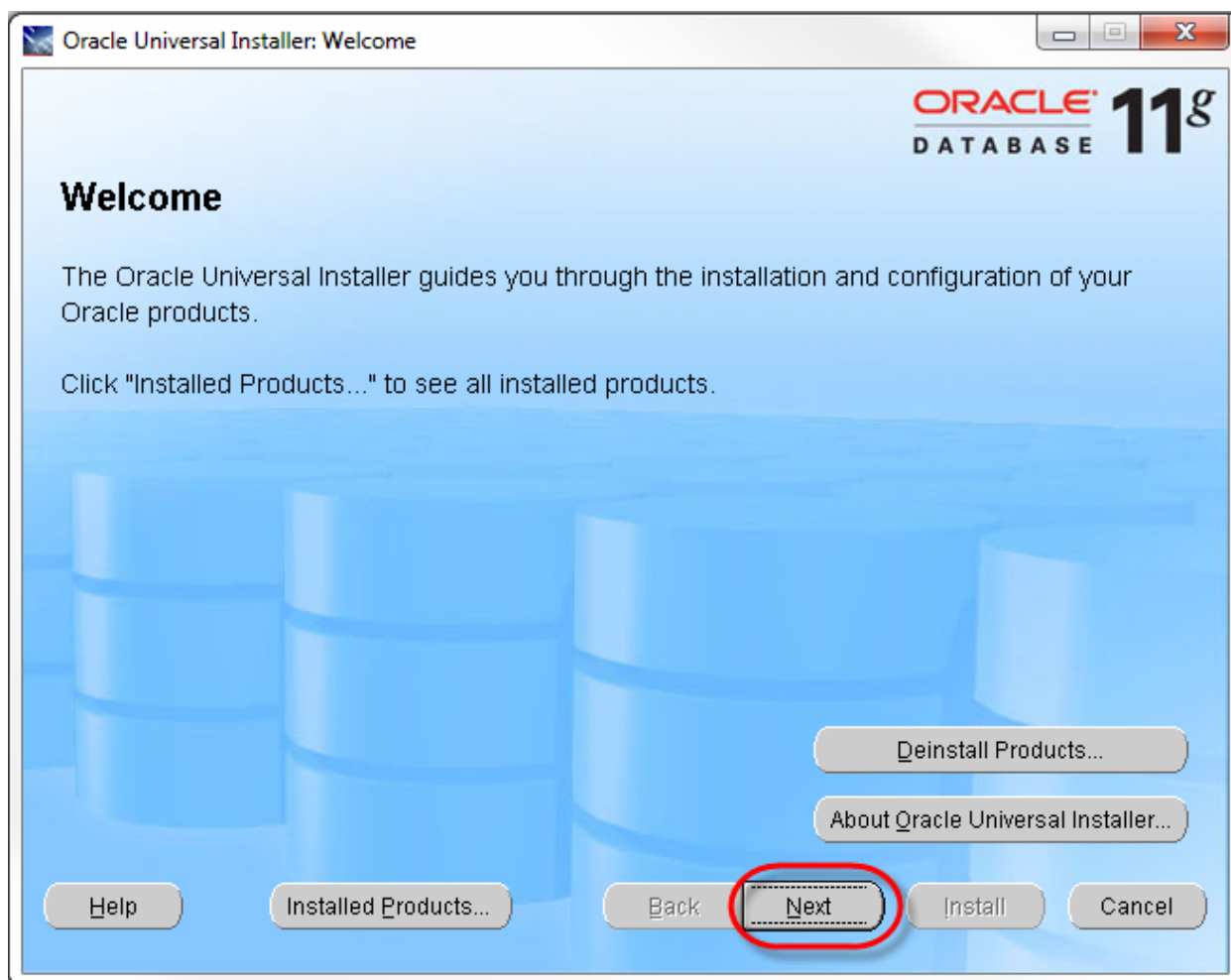
This section will guide you through the process of installing the Oracle Data Access Components

1. Obtain the Oracle Data Access Component installer from Oracle. The version we recommend is ODAC1110720 for 32bit Windows.

**Note: You must use the 32bit drivers even if you run on a 64 bit processor as other parts of Vasont are 32 bit and require 32 bit drivers.**

**Note: ODAC runs independently of your local Oracle client and its version 11g**

2. Start the installer by double clicking setup.exe. The Welcome screen appears. Click "Next".





3. Be sure that Oracle Data Access Components for Oracle CLIENT is selected and click "Next".



4. Select an Oracle Base, Name and Path. These should NOT be the same as your Oracle Home folder or path. It's probably best to leave the defaults in place, although the install wizard does actually fill in the path with your username at the end. Removing the username is feasible (as shown below). Click on "Next".



**Oracle Universal Installer: Specify Home Details**

**ORACLE 11g**  
DATABASE

### Install Location

Specify a base location for storing all Oracle software and configuration-related files. This location is the Oracle Base directory. Create one Oracle Base for each operating system user. By default, software and configuration files are installed by version and database name in the Oracle Base directory

Oracle Base:

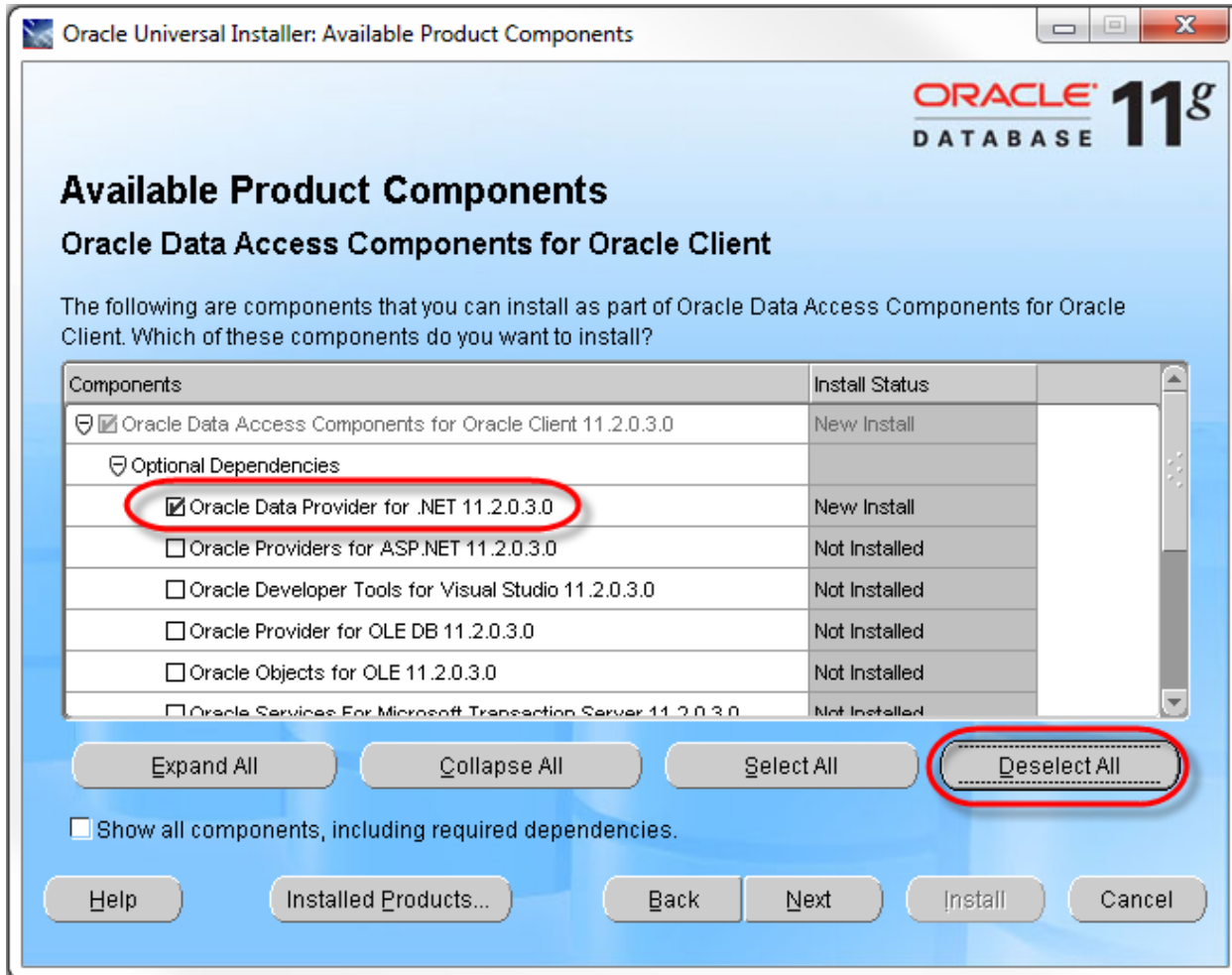
### Software Location

Specify a base location for storing Oracle software files separate from database configuration files in the Oracle Base directory. This software directory is the Oracle Home directory. Change the defaults below either to specify an alternative location, or to select an existing Oracle Home

Name:

Path:

5. There are only **two** products to install. Click "Deselect All". Then make sure the *Oracle Data Provider for .NET 11.2.0.2.0* is checked. **DO NOT CLICK NEXT YET.**



6. Scroll to the bottom of the list and make sure Oracle Instant Client 11.2.0.3.0 is checked. Now click on "Next". NOTE: On some systems, by default, both of these selections are checked.



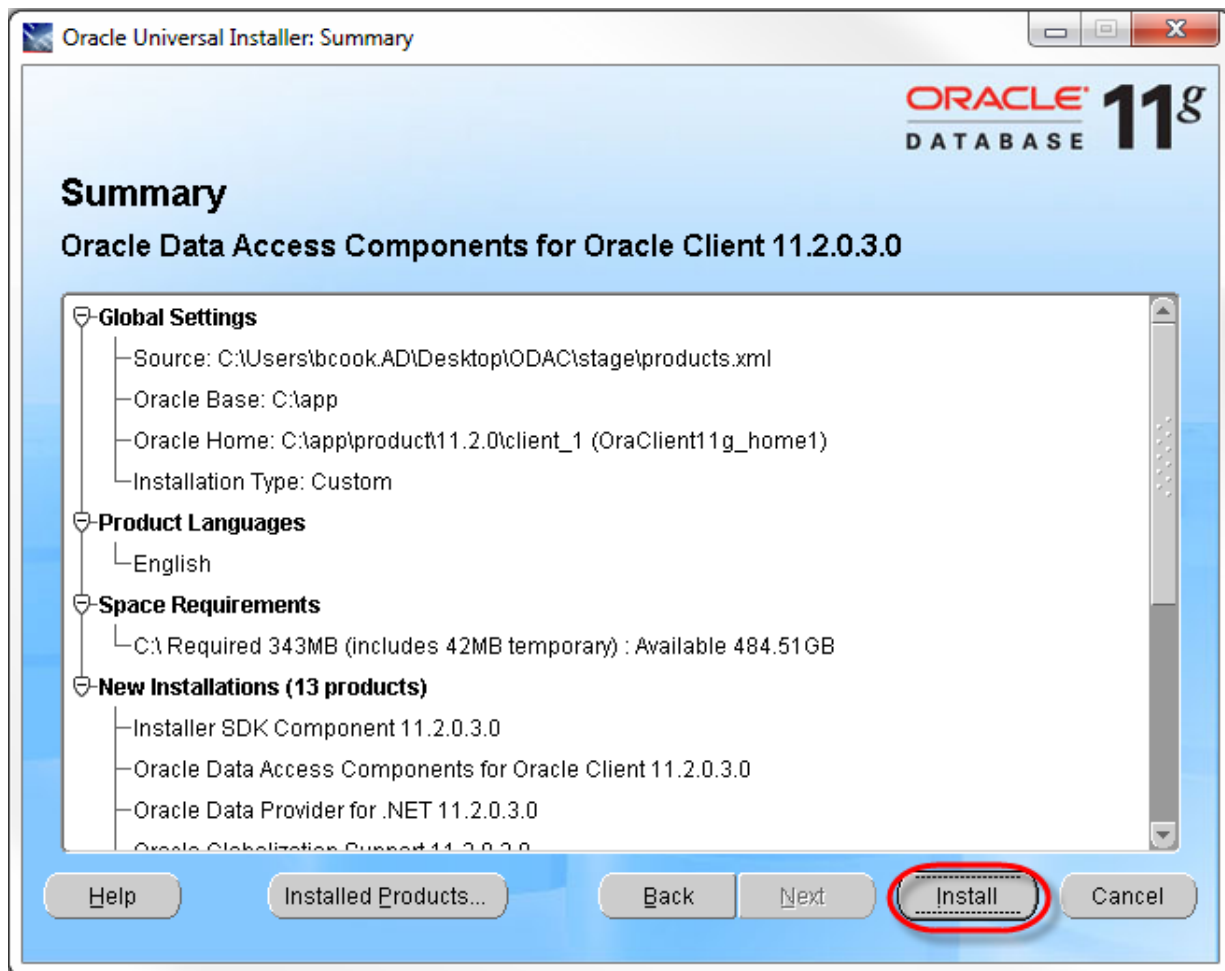
## 7. On the Summary page click Install

Note: If an Oracle client is already installed on the PC this method will create a second Oracle client. To ensure proper operation, copy these two files from your existing client home to the new ODAC client home that is created..

- Sqlnet.ora
- Tnsnames.ora

Typical Path:

..\Client\_1\NETWORK\ADMIN



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