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# Under the hood of Collaboration Suite Version 1

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## Introduction

Oracle has recently announced the availability of a new application offering in the Unified Messaging space. The product is known as Oracle Collaboration Suite. This paper will outline the underlying components that comprise a complete installation of Collaboration Suite and also discuss architectural issues that need to be addressed before a successful implementation can be achieved.

Collaboration Suite comprises a combination of a number of products Oracle has had for sometime, namely:

- Email
- Files
- IAS
- RDBMS
- Directory & SSO

And with a recent company acquisition (Steltor) Oracle has now acquired powerful calendaring functionality.

Oracle has brought these product offerings together under the Collaboration Suite product line and Release 1 is now available after recent product launches in the Asia/Pacific region.

## Collaboration Suite Product Architecture

The underpinning technology supporting Collaboration Suite is based on Oracle Database Version 9i and Oracle 9ias.

The basis of this architecture is to allow organisations to benefit from single sign-on (SSO) and portal functionality built into the application server and the robustness and scalability offered by both the 9i Database and application server.

If you take the capabilities of the Oracle Technology and mix it with the cost effectiveness of scalable Linux clusters, you end up with an infrastructure you can scale to meet your corporate needs with a relatively modest investment.

At a high level the following diagram illustrates the various technology layers involved in delivering the solution. This paper will delve down to the next level and seek to illustrate the various components

involved and how they interact and the types of installation considerations that may arise.

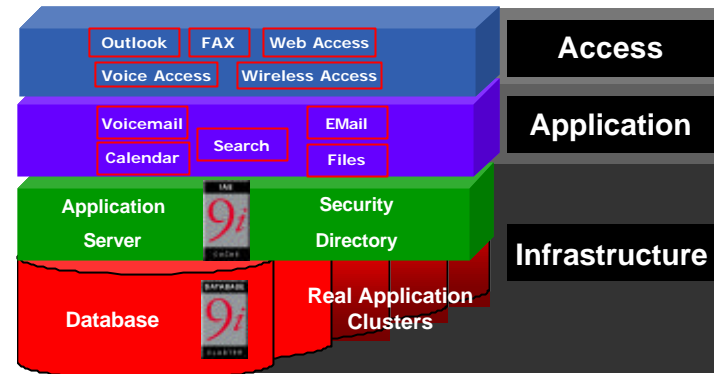


Fig 1: Collaboration Suite Component Architecture

## Basic Installation Considerations

The main consideration before embarking on an installation of Collaboration suite is on the server technology, including the choice of operating system and the number of servers required. It is perfectly possible to install and configure collaboration suite to run on a single Intel Linux server through to vastly more complex implementations due to the multi-tier flexibility with the product offering.

The choice of server platform and number will come down to the size of the user base and the expected availability requirements mixed with the expected data volumes.

## Platform Architecture

A recommended simplistic installation would involve 2 Intel servers running RedHat ASE 2.1 or SUSE SLES7. The following diagram outlines a two server installation model indicating which components would be installed on what server.

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## 2 Server Linux Implementation

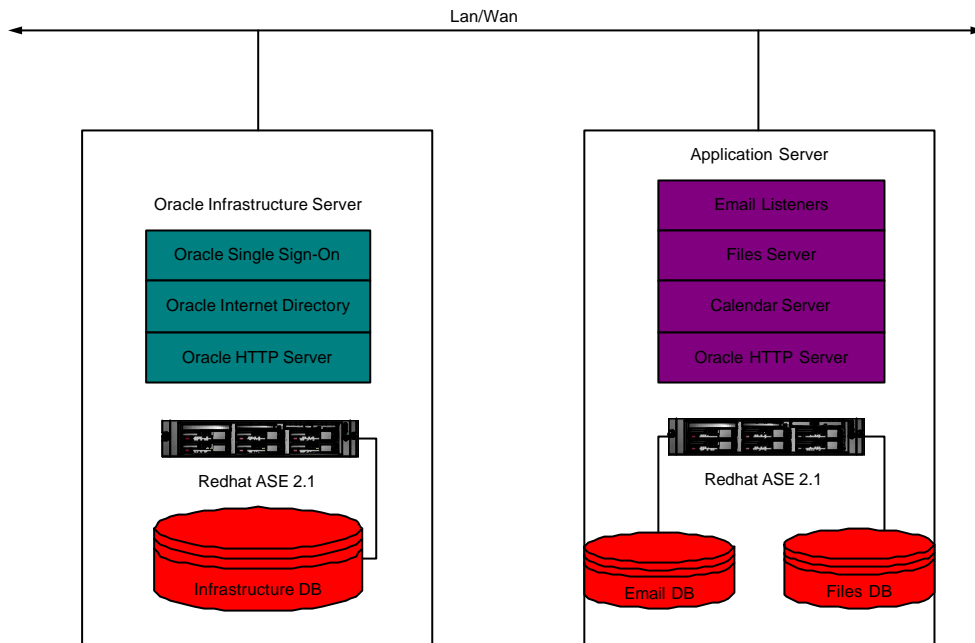


Fig 2 – 2 Server Linux Configuration

Further architectural options are discussed in more detail later in this paper in the section Platform Architecture Options on page 3.

### Supported Platforms

The current list of certified server platforms is available in Metalink but at the time of writing the following were certified

- HP-UX v11
- HP-UX – Tru 64
- Windows 2000 Server
- AIX v4.3.3
- SuSE SLES7
- RedHat ASE 2.1
- Solaris v2.6, 2.7, 2.8

Once the platform choice has been made then it's down to the serious business of installation and configuration of the software.

### Data Storage

Collaboration Suite uses the Oracle database as its main data repository. With Release 1 there is one significant exception and that is calendaring which

is currently implemented via the use of standard files stored in the native operating system formats. There are plans to complete the full integration of calendaring into the database, but this is not expected until Release 4.

The number of Oracle Instances required for an implementation will depend on whether the organisation has an existing SSO infrastructure and what installation options are required. A complete installation will optimally result in the requirement for a minimum of 3 Oracle Instances. The three are required to perform the following functions

- Infrastructure Database for Meta-Data and SSO
- Oracle Files Database
- Oracle Mail Database

### Installation Tasks

The installation pack contains a number of CD's which can be categorised in the 4 main installation processes.

1. Infrastructure Install
2. Information Storage Install
3. Application Install
4. Client Install

Each installation should be completed into an individual Oracle Home. (Failure to observe this will result in serious installation issues – experienced personally by the author!)

### **Infrastructure Install**

This process creates the infrastructure required to support an organisational implementation of Oracle applications. If a company has an existing Infrastructure repository then this step will largely be an upgrade of the existing repository using the Interoperability patch which comes with the installation CD package.

If it is a new install then the following components will be installed depending on Installation options chosen. (It is highly recommended for a new installation to select the default list of products)

- Oracle RDBMS v9.0.1.3
- Oracle Internet Directory v9.0.2
- Oracle IAS v9.x
- Oracle Enterprise Manager
- Oracle Containers for J2EE (OC4J)
- Oracle SSO
- Oracle Metadata Repository

The infrastructure database will have a default instance name of IASDB and this cannot be changed during the installation process and should not be changed post installation. The listener for this database will by default be configured to listen on Port 1521 and this also should be left unchanged. If the Infrastructure install is on an existing database server platform then it is recommended to keep this installation totally separate from any other Oracle Software

### **Information Storage Install**

The second step is to complete the information storage installation which essentially installs a version of Oracle RDBMS (v9.2.0) and can optionally create seed databases for Oracle Email and Oracle files depending on what installation options were selected.

It is not recommended to try and share database instances for the various functions due to both internal and business reasons (e.g. the Infrastructure database is a different version to the Data Storage databases). There is the potential for conflicting initialisation parameters or patches, as well as backup and availability practises which may have to vary to address specific business needs for the various type of data being stored

By default the Install process will create the databases within your Oracle Home filesystem so you have to pay special attention when running the DB Configuration Assistant to ensure you get an optimal database installation. For added availability there is the opportunity to deploy the databases on technology such as HP RAC clustered servers.

### **Application Install**

This is by far the most complex part of the overall installation process and will require a number of manual configuration steps once the initial software installation is complete. The amount of work required will vary again, depending on the installation options.

This install process can be broken down into two main areas, 1 Installation & 2 Site customisation. Step 1 – Installation is primarily achieved using the Oracle Installer but final mail database configuration requires manual running of the umconfig.sh script. This is then followed up by substantial manual configuration steps which generally involve using the Web pages that support the various products and Enterprise Manager to start and stop the various components as they are changed

At this point it will become apparent that sensible naming conventions need to be adopted for server host names, application instance names, database instance names and server domain names. All of these components will play a part in the final successful deployment of collaboration suite and time spent up front determining these will pay dividends during this process.

There is an excellent document called “Oracle Collaboration Suite – Configuration Handbook Release 1 Version 9.0.3” which will guide you through most of the installation process.

### **Client Install**

The client installation CD contains several of the common mail client connector tools. Installation of these is relatively straight forward and will for example enable existing client desktops with MS Outlook to access both their mail and calendaring information from Collaboration suite whilst reducing the requirement to retrain users on how to use a new mail/calendar client.

### **Platform Architecture Options**

The options for installation of collaboration are only limited by things such as budgetary constraints and common sense. An example of the high end is the current implementation Oracle itself uses to deploy email and calendar to its 45000+

email community includes all of the following kit plus more :

- 6 EMC 8430 Disk Arrays
- 2 HP v2600 Servers
- 1 HP v2500 Server
- 7 HP L3000 Servers
- 7 Dell 2650 Servers
- 6 Sun 420 Servers
- 4 Sun v480 Server

But moving back into the reality of the customer base which may exist in the Asia Pacific region!

The classical approach to architecting this type of solution will always come back to the same old questions

1. How many users
2. How much data
3. Return to operation time (RTO)
4. Backup window
5. Is it internet facing?

### **Flexibility**

The solution Oracle has provides a high degree of flexibility with the database storage components being able to be run in platforms like RAC clusters. It also allows for multiple Email storage database and files domains and databases should the need arise and certainly supports multiple Collaboration suite application servers. At this stage 9ias is not supported in RAC cluster but this is expected in an upcoming release of 9ias.

The architecture also permits a “building block” approach which can see additional hardware servers added as and when the need occurs.

Another potential flexibility option is the ability to mix different operating system architectures across

the various layers. This is illustrated by the deployment approach Oracle have used internally which sees a combination of HP-UX database servers with Sun, HP and Linux all mused in various roles in the mid and infrastructure tiers.

### **Basic Architecture Considerations**

The Oracle Infrastructure should be kept separate from the information storage and Application installations.

The infrastructure storage should be viewed as “the corporate repository” for Oracle applications and therefore it should not be linked intrinsically with collaboration suite. The LDAP directory component can be interfaced to other directory servers such as Active Directory, NDS or I-Planet.

The version of the infrastructure database repository is entangled with the versions of other such software as 9ias, OID etc so it will always be managed along with this software.

As shown in the Oracle implementation a mixture of platforms is possible but I would suggest TCO would be lower if one platform was selected. Again for the local market I would suggest the best value would be achieved from a Linux implementation involving several servers.

The main decision around the number is whether to separate out the data storage components from the application. For higher availability there is the option of using clustered servers for the mail and files storage components.

The most common architecture we will see in this region would be implementations based around 2-3 servers (See Fig 3) or possibly a RAC cluster for the database backend (See Fig 4).

While the use of a cluster will dramatically improve the availability of the database backend, true high-availability will not be achieved until the 9ias application server is made cluster aware which will then permit cluster usage for both the application layer and also the infrastructure layer.

# 3 Server Linux Implementation

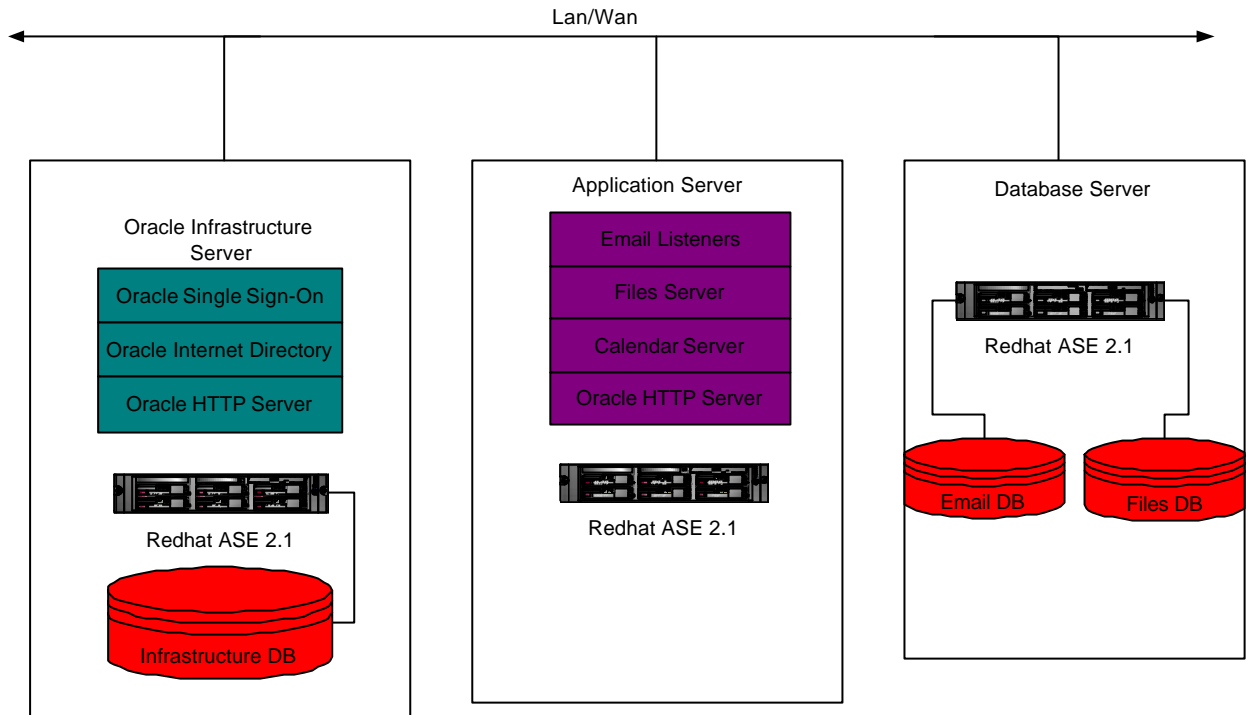


Fig 3 – Classic 3 Server deployment Architecture

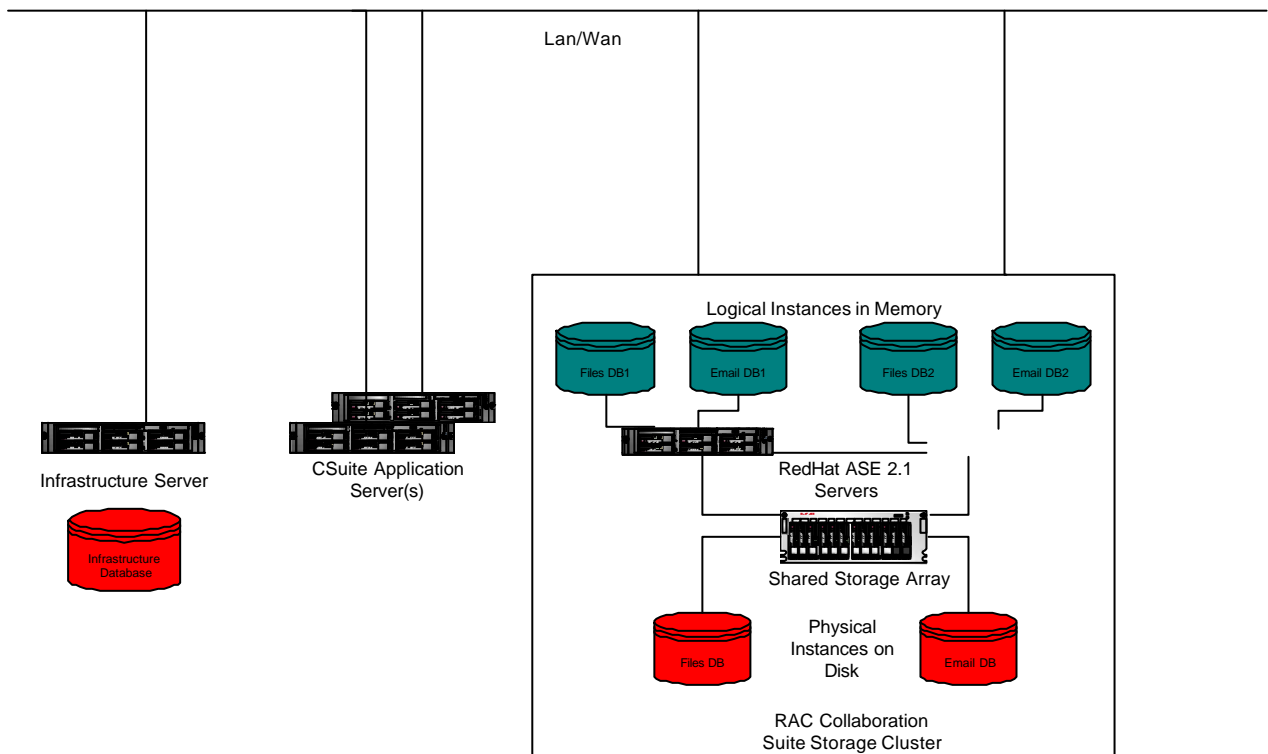


Fig 4 – RAC Clustered Collaboration Suite Architecture

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## References and Related reading

The following are documents I used whilst putting together this paper. There are many fantastic sources of very valuable information on the various Oracle websites namely:

<http://metalink.oracle.com>

<http://otn.oracle.com/cs/>

### White Paper

*Oracle Collaboration Suite – A Technical White Paper-*

[http://otn.oracle.com/products/cs/cs\\_twp.pdf](http://otn.oracle.com/products/cs/cs_twp.pdf)

### Installation Manual

*Oracle Collaboration Suite – Configuration Handbook Release 1 Version 9.0.3*

[http://otn.oracle.com/products/cs/cs\\_config\\_handbook.pdf](http://otn.oracle.com/products/cs/cs_config_handbook.pdf)

## Acknowledgements

A special thanks to Martin Lambert from Oracle Partner services in Australia who verified the technical content of this paper and who has provided technical help when it has been required.