Ideagen

PleaseReview Enterprise Deployment Guide

Version 7.x

Contents

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Introduction

Overview

This guide contains information for those concerned with deploying the PleaseReview™ document review server in an enterprise environment. This would be characterized by, for instance, the need to make the system available externally as part of an extranet, or to distribute the system across several physical servers for scalability or availability reasons.

It also includes details on deployment considerations for the various optional client-based components.

It is designed to give the customer information on the supported options for deploying PleaseReview to meet local requirements for security, reliability, and scalability.

Scope

This guide is intended for IT staff designing a PleaseReview implementation in an enterprise environment.

This document provides a high-level overview of the various components and configurations which are possible and/or sensible. It does not contain information on how such configurations should be achieved. Detailed instructions on installing, configuring, maintaining, and troubleshooting PleaseReview can be found in the PleaseReview Installation and Administration Guide.

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PleaseReview architecture

Overview

This section contains a description of the functional elements of a PleaseReview server. It is designed to give a detailed, but not too technical overview of the component parts of PleaseReview.

PleaseReview requires Microsoft .NET framework 4.7.2 or later but the latest version is recommended.

Component architecture

PleaseReview has three main components:

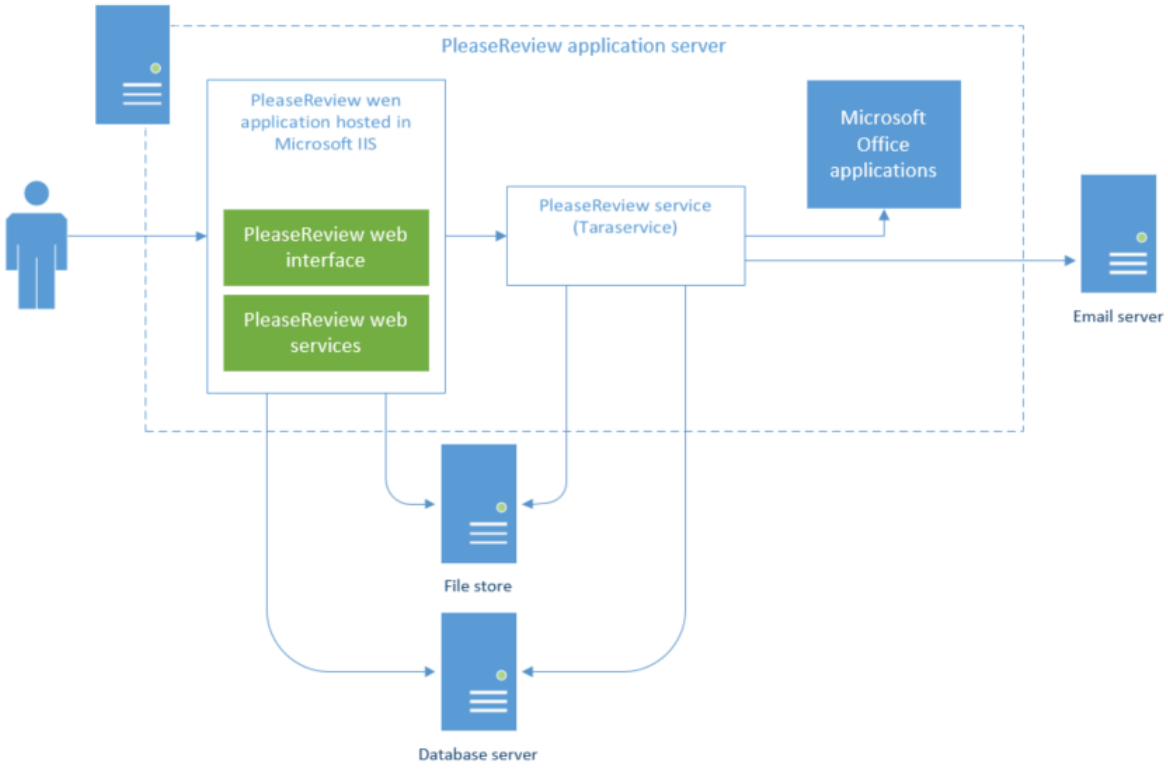
1. The PleaseReview web interface.
2. The PleaseReview service.

PleaseReview requires:

- A database;
- A file store;
- An email server;
- A licensed and activated copy of Microsoft Office.

Note that all the required items can be on the same server as PleaseReview itself.

Figure i PleaseReview component architecture



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Server components

The PleaseReview server is supported on Windows Server 2012 R2, 2016 and 2019. The default (and recommended) configuration is to run all PleaseReview server components in 64 bit mode, but they can be locked to 32 bit if required.

PleaseReview has been designed as a component based application for maximum flexibility when deploying into complex environments.

Each of the 'components' shown in the illustration above does not necessarily represent a discrete piece of hardware or even a discrete windows installation. Services may be clustered and/or several may run on the same box.

Database server

The database server holds all the metadata associated with a review such as Reviewers' comments, the names of documents and the review properties. It also holds the username and password information (password information is not held if the user is authenticated using a third-party system such as Active Directory or Documentum, etc.) as well as many system configuration settings. Note that the document files themselves are not stored in the database; all files are held in the file store.

The database account that PleaseReview uses does not require system level privileges; if the database account has privileges to insert, delete, update, and retrieve rows, PleaseReview will function correctly.

The configuration and architecture of the database itself is completely opaque to PleaseReview so it is generally compatible with any database clustering, fault tolerance, or replication technology that works with Microsoft .NET. If the database is on a separate physical server, there needs to be a fast and reliable network link between this and the PleaseReview components.

PleaseReview supports various versions of SQL Server and Oracle Database. Check the PleaseReview Installation and Administration Guide for the precise versions of each database platform supported.

Email services

PleaseReview requires access to an email server to send emails about reviews, etc. Only an email relay service is required as PleaseReview only sends emails to users; it does not receive them. If required, PleaseReview supports SMTP AUTH and SSL/TLS for relaying purposes; or the relaying email server can be configured to accept emails for relay from the PleaseReview server's IP address.

The email integration can be disabled if it is not required, so no email server would be required. This is only likely to be useful if PleaseReview is integrated into another application with its own notification mechanism.

File store

The file store is simply a location that both the web server(s) and the PleaseReview service can access. There is no specific server process required to manage it.

The Windows accounts that the PleaseReview service and the PleaseReview web service use must have 'full control' access over these files. The storage can be physically local, based on network shares (NAS or file server), or placed on a common SAN.

If the entire PleaseReview system is on one server then the default location is within the PleaseReview installation itself and no further action is required.

If PleaseReview will be deployed in a clustered environment, then all the clustered nodes must share a common file store.

PleaseReview service

The PleaseReview service processes documents and sends emails on behalf on PleaseReview. It is the only part of PleaseReview that requires Microsoft Office. It is normally installed on the same server as the

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PleaseReview web interface but this is not mandatory should security or performance considerations dictate otherwise. Similarly, it is possible to have several separate installations of the service if required for performance reasons.

PleaseReview web interface

The PleaseReview web interface is the main user interface for PleaseReview. It is a managed-code ASP.NET application using .NET 4.7.2. It can co-exist with other ASP.NET applications running on the same web server if required, although it should be in a separate application pool.

Although the web server is represented in the illustration as a single machine, this can be implemented as a clustered solution if higher levels of scalability or availability are required than could be achieved with a single server. Since PleaseReview uses session cookies, the web server cluster must be configured with client affinity (either cookie-based or IP address based) for this to work. PleaseReview does not currently support external ASP.NET session state stores.

PleaseReview web services

The PleaseReview web services form the API on the PleaseReview server. They are deployed as part of the PleaseReview web interface. If no external components will be accessing PleaseReview (such as the Offline Client, the Word plugin, or any third-party components) these can be either deleted from the web server or have their access restricted.

PleaseReview uses the concept of 'web services access keys' to validate the authenticity of external applications. These keys grant external applications access to the web services, and without a matching key, external applications are unable to communicate with the PleaseReview web services. By default, PleaseReview is installed without any web services access keys installed. The standard access keys for the PleaseReview client applications are shown in the PleaseReview Installation and Administration Guide but these can be changed if required.

Use of the APIs other than by the supplied components and authorized third party integrations, must be separately licensed.

Client components

All the PleaseReview client components communicate with the PleaseReview business services using web services. This allows third parties to use industry standard tools and techniques to leverage the PleaseReview services.

The client components are entirely optional and simply augment the standard web interface. There are two main client components:

1. The Offline Client (OLC) provides offline review capabilities for users who are not always connected.
2. The Word plugin provides a way to initiate a review or upload edited Zones from within Microsoft Word.

The client components are only required for the above functions. More details are provided in this document.

All client components are available only on Windows.

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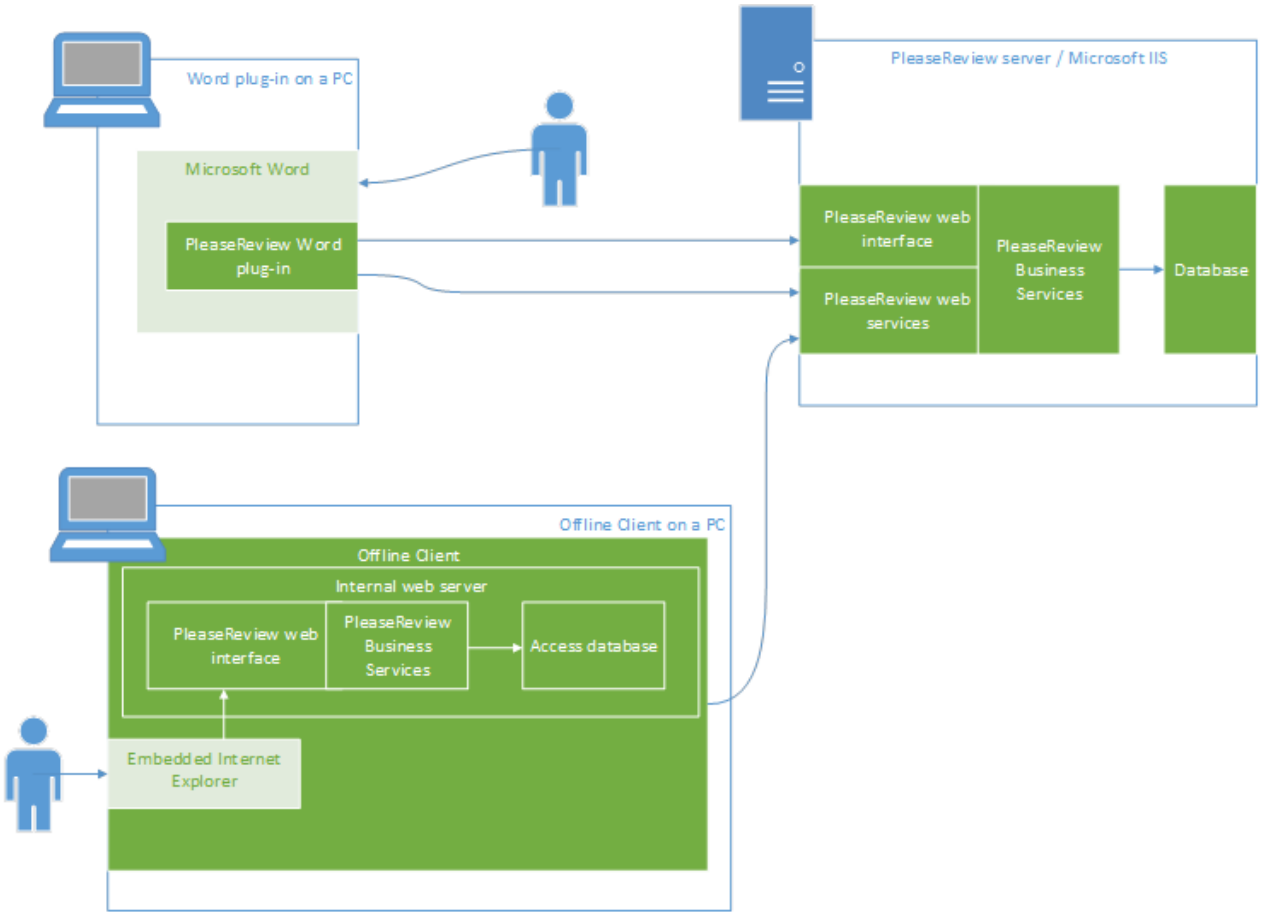
Figure ii PleaseReview client components



PleaseReview Offline Client

The PleaseReview Offline Client (OLC) allows a user to download reviews from the main PleaseReview server, review the document(s) offline and then upload their comments when they next have a network connection.

This application is designed to give as far as possible an identical review experience for an offline user to that of a user using the PleaseReview web interface online.

To achieve this, the OLC includes a cut-down version of the PleaseReview server which executes the same web application code that is used in the main web application itself. It uses the Jet (Access) Database engine and a built-in web server, so the OLC does not require IIS or SQL Server to be installed on the client.

Rather than opening a separate web browser window, it embeds the Microsoft Edge WebView2 to show the review in its own window.

The operation of the Offline Client is:

1. When the user first establishes a connection, it downloads a copy of the relevant parts of the web UI code from the PleaseReview web server. Note that if the server is subsequently upgraded to a later version, the OLC will automatically download the new version the next time it reconnects.
2. Connects to the server to list reviews in which the user is a participant, and allows them to select one or many to download.
3. Once reviews are selected, it downloads the relevant document files and database information required to conduct the review.

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4. It starts the PleaseReview web interface on the user's local PC and displays the web interface in a window managed by the OLC.
5. When the user has finished the review offline, it allows the user to upload their comments to the server using a web service.

Other notes on the OLC:

- The OLC install comprises a single install program and can be deployed by most remote deployment tools (Microsoft SMS, etc.). It requires .NET framework 4.7.2 to be installed;
- Microsoft Office is not required to run the OLC; all document processing is done on the PleaseReview server before the user downloads the review to their PC;
- The OLC does not allow review creation offline;
- Users log in to the PleaseReview main server to upload/download reviews using their normal username and password as well as SAML2 based single sign-on solutions;
- The OLC also supports connections using secure HTTP (HTTPS). HTTPS connections are required for SAML2 based systems;
- The user's status on the main server is updated to "offline" to indicate to the review Owner that the user is handling this review offline and will upload comments later.

PleaseReview Word plugin

The PleaseReview Word plugin provides two pieces of functionality:

1. A user with Author privileges can create a review in PleaseReview directly from Word. This works by connecting using a web service to upload the document, and then launching the browser (already logged in and on the correct page) to continue the process of setting deadlines, adding participants, etc.
2. A user who is a Contributor in a review using the co-authoring (Zones) functionality can publish a Zone directly into PleaseReview from inside Word.

The Word plugin requires minimum .Net 4.7.2 to be already installed on the PC. It also requires VSTO 4.0 for the Word 2013/2016/2019 plugin.

The Word plugin shares its server configuration details with the OLC so the same stored login credentials can be used to log in to both if required.

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Deployment scenarios

Overview

This section contains common scenarios for the deployment of the PleaseReview server. It is designed to give a reasonable level of technical information in order that IT staff can make an informed decision about how best to deploy PleaseReview on their local site.

The configurations described in this section are recommended configurations and those which work "in principle". Other configurations are possible depending on your specific requirements or IT standards and policies. Conversely, there may be local factors or restrictions which mean some of these configurations are not possible in your environment.

Note that the following architectures are specifically not supported:

- Load balancing without client affinity;
- Reverse proxy which changes the "path" part of the URL – reverse proxy may only change the host and port;
- Active-active load balancing when integrated into an external system where PleaseReview is load-balanced independently of the external system (see Complex enterprise deployment for an illustration).

Please read the notes in the PleaseReview Installation and Administration Guide on session state and load balancing before doing the network design.

Configuration options

This section provides an overview of the various configuration options. You can 'mix and match' these options, within limits. The next section contains some examples.

Note that we do not consider the email server in this discussion. This will almost always be a separate server on the network.

Server	Purpose
Single Server	This is the simplest configuration. All components required for PleaseReview (web interface, web services, file store, database server, Microsoft Office and the PleaseReview service) are installed on one server. Note that PleaseReview can support fairly heavy production usage in this configuration.
Separate Database server	A common configuration is to have the database server on a separate box that is already running the required database software, but to have everything else on a single server.
Multiple on one server	If required, you can install multiple independent copies of PleaseReview on the same server. Note that you cannot install multiple instances of IIS, and you would not normally install multiple instances of the database software.
Co-existing with other applications	PleaseReview is designed to be a lightweight, flexible, and well-behaved application; it does not use large amounts of server resources, does not mandate an exact server configuration or versions of other software components, and does not expect to have the whole server to itself. It will generally co-exist easily with other applications inside the same operating system providing there is sufficient hardware capacity.
Virtualization	PleaseReview is fully compatible with any current virtualization technology such as VMWare or Hyper-V, including storage virtualization.
Load Balancing	PleaseReview can be used in a load-balanced/clustered/web farm environment where a network device sends requests to one of several web servers to give better performance and resilience.
Separate Web Apps	It is also possible to run separate copies of the web application accessed with different URLs (whether on the same server or different servers). This may be

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	necessary if you need to expose different configurations of the web interface to different users. For instance, if you want to expose an NTLM authenticated system to intranet users but use forms based authentication for extranet users. You can also publish the same physical web root directory as two separate URLs, for instance to use HTTP for some users and HTTPS for others.
Service on separate boxes	It is possible to run the PleaseReview service on a separate box either for performance reasons or to avoid having to install MS Office on the web server.
Reverse Proxy	PleaseReview is compatible with Reverse Proxy (URL rewriting) configurations, provided the rewriting rule changes only the server name and not the URL path
Integrated Solutions	PleaseReview (in many of the above configurations) can be integrated with document management applications such as Documentum or SharePoint, or with your own application if you perform a custom integration. Note that licensing the APIs for custom integrations is a cost option.

Note: If the PleaseReview components are spread over separate machines, a common "Service Account" user will be needed so that the web interface and the PleaseReview service access files as the same user.

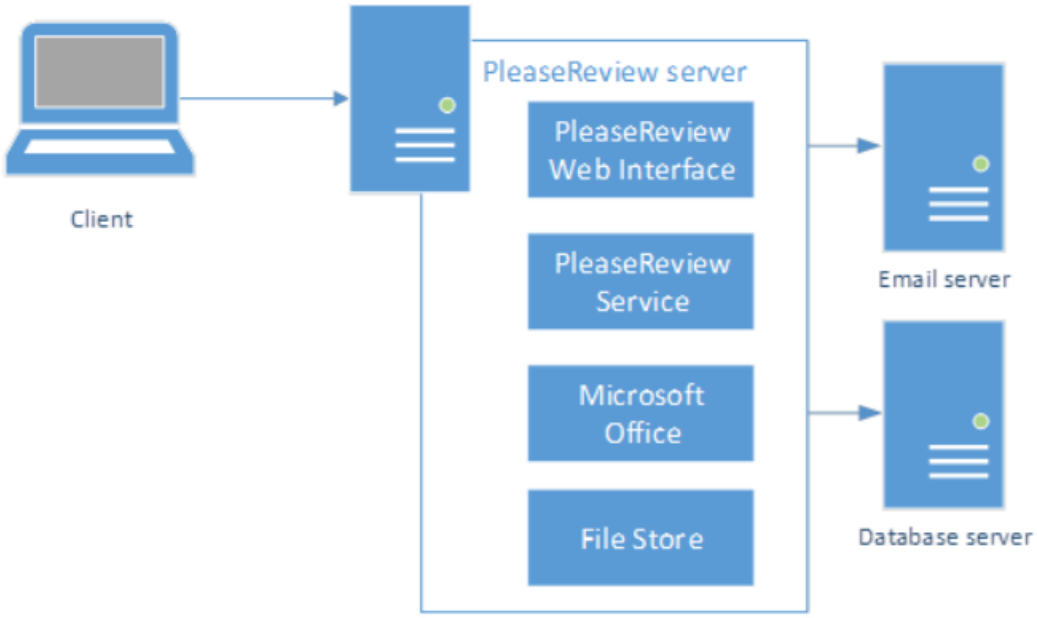
This user will also require full control access to any common file store between the web interface and the service.

Examples

Basic configuration

In this typical standard configuration, all the PleaseReview components are installed on a single box but a separate database server is used. As noted above, you can install the database on the same server if required.

Figure iii Basic configuration deployment example



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Load balanced

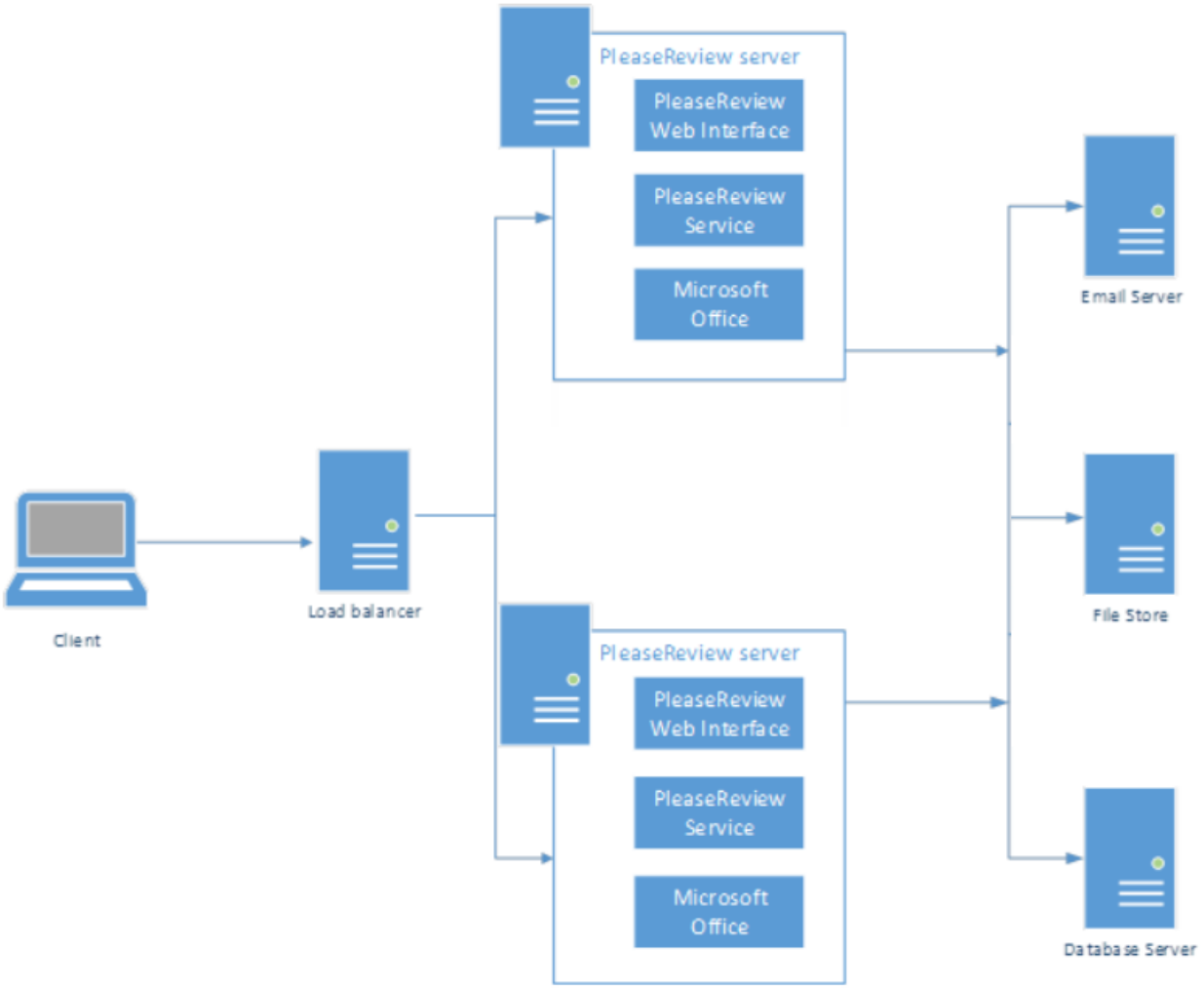
This scenario can be scaled out to more than two PleaseReview servers if required. It is possible to use an active-active configuration where requests from clients are directed to one of the two PleaseReview servers to balance the load across them, or in an active-passive (hot standby) configuration where the second server is idle unless the first one breaks down.

Normally in the event of a failover, users would have to log in again and re-enter the review they were in, but any comments already made will have been preserved. Achieving a completely seamless failover may be possible but would probably require specialist hardware and configuration.

Note again that you must use client affinity when load balancing.

If you want to keep the web farm for web applications only, it is possible to run only the PleaseReview web interface on the web servers (possibly co-resident with other web applications) and then have a separate box (or several) to run the PleaseReview Service.

Figure iv Load balanced deployment example



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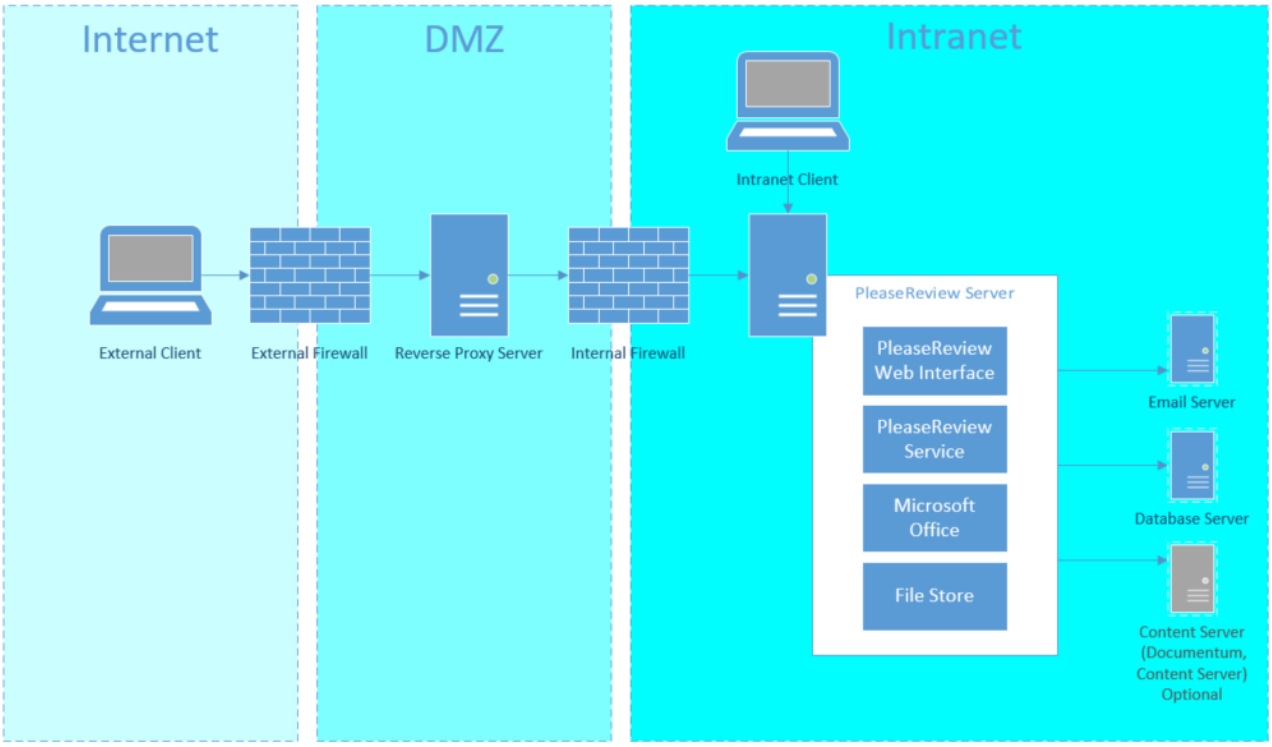
Reverse proxy

In this scenario, all the components are on the main corporate network but PleaseReview can be accessed from outside via the Reverse Proxy server.

Figure v Reverse proxy deployment example



The only access required from the DMZ through the internal firewall is for HTTP (or HTTPS) traffic. All other connections are purely within the internal network.

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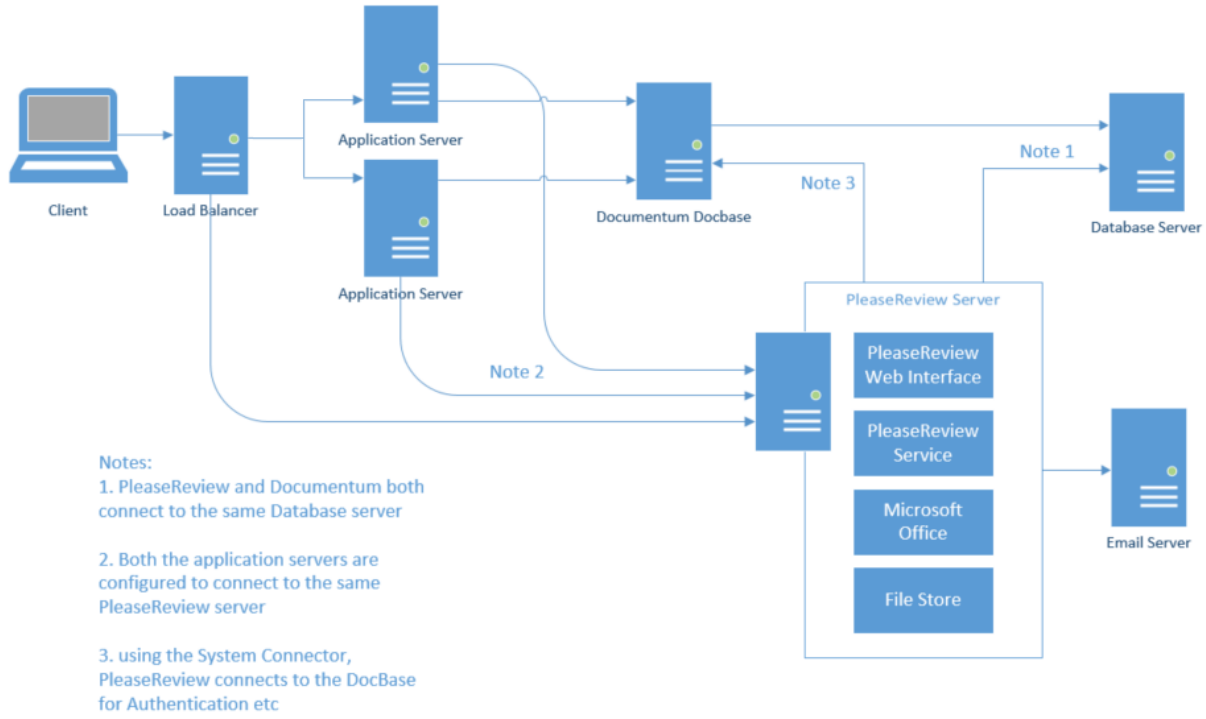
Integration into an existing application

In this scenario, a single PleaseReview server is shown integrated into a Load-Balanced Documentum implementation, with the Documentum Docbase being fronted by some form of third party application server. This could apply to SharePoint or any other DMS.

Figure vi Integration into an existing application



Complex enterprise deployment

In this scenario, PleaseReview is shown integrated into a Load-Balanced third party application, based on Documentum, with Database services supplied by an Oracle RAC Cluster. The same architecture could apply for any other application integrated with PleaseReview or with SQL Server databases. SAN storage is used to store both the PleaseReview document files and the Documentum and PleaseReview Oracle Databases. To simplify the diagram, we have not shown the components inside the PleaseReview server (Web interface, Service and MS Office).

Some typical variations of this scenario might be:

- Using only a single PleaseReview server (or more than two);
- Running the PleaseReview service on a separate box or pair of boxes;
- Having the Oracle RAC nodes with their own separate shared disk storage and using a different SAN or NAS arrangement to store the PleaseReview document files;
- Having the PleaseReview servers on the same Windows box as other Web based enterprise apps.

Note: In this scenario where PleaseReview is integrated with another application and both are load balanced in an active-active configuration, each third party application server must be configured to connect to a specific PleaseReview server and these must be load balanced as a pair. It is not possible to load balance PleaseReview independently of a third party application server.

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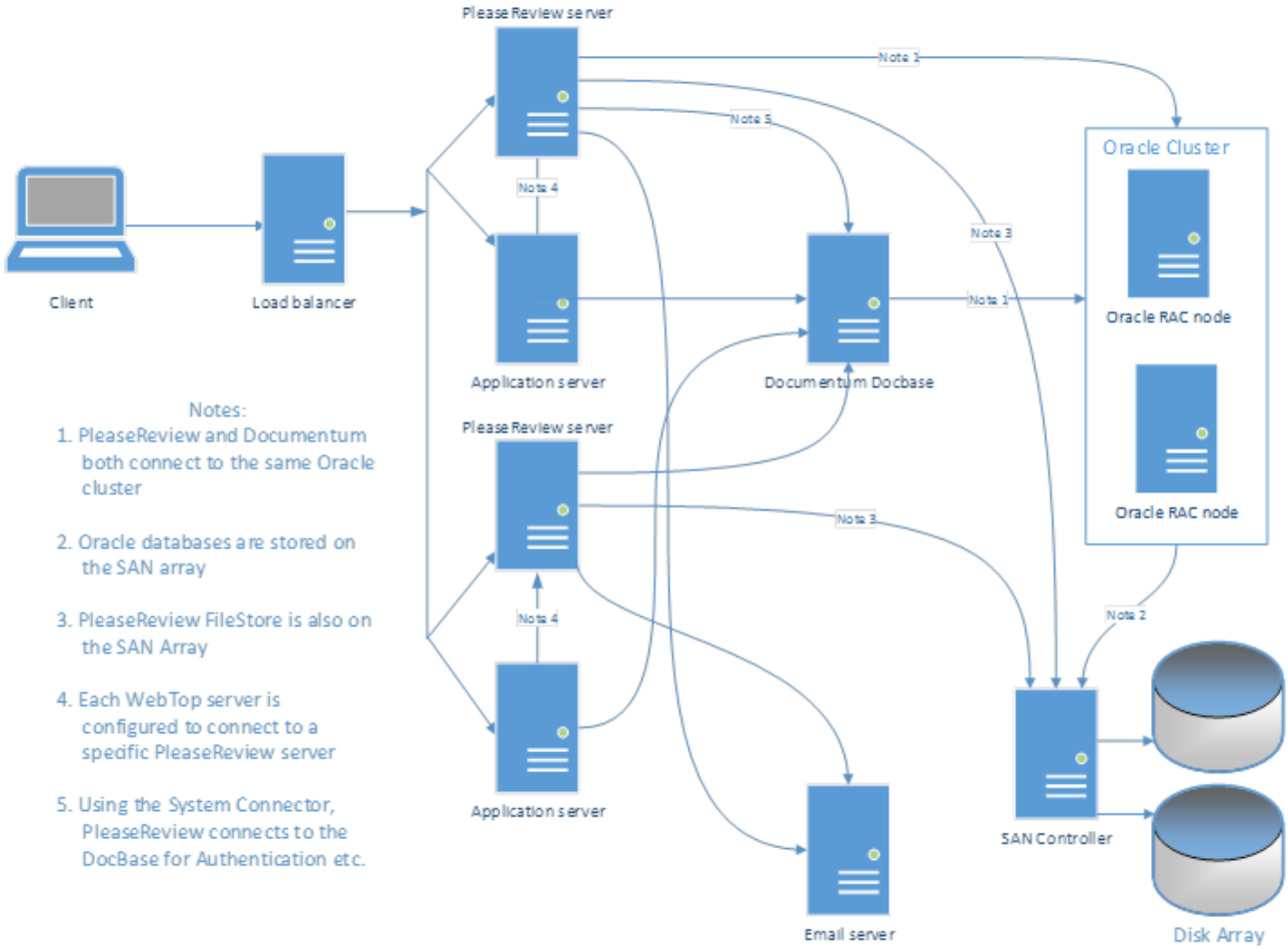
Figure vii Complex enterprise deployment



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Backups

There are three locations where PleaseReview stores data which must be backed up:

1. The PleaseReview file store.
2. The database/schema in use by PleaseReview.

There are other temporary working directories but these do not need to be backed up.

More information about backing up is in the PleaseReview Installation and Administration Guide but essentially you would normally use a standard Database backup tool for the database and a file-based backup for the file store.

In addition, we recommend you take a full backup of the software installation directory before and after installing or upgrading.

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