

Standard Operating Procedures of Middleware

1. Purpose of the Document

This document provides an overview of the technical environment of the Publications Office as well as some general rules linked to the technical organisation of the Publications Office and applicable to all applications hosted at the Publications Office.

2. Disclaimer

The information contained in this document reflects the situation in force at the Publications Office at the time of writing and is subject to change.

The Publications Office can not be held liable for the consequences of any reliance on the information provided or for any inaccuracies in such information and it does not commit the Publications Office regarding the future evolution of its data processing and network environment.

The content of this document may vary in relation to any particular project. In particular, the environment to take into consideration for a specific project/purchase order – especially the exact software versions – will be determined at the very beginning of the project. This also includes the rules to apply by both parties in order to modify this environment.

The Publications Office strongly advises the contractor to ask for clarification should there be any doubt about the contents of this document. If requested by the contractor, a meeting can take place at the very beginning of the project to answer questions and provide examples of the expected documents.

3. Technical Environment of the Publications Office

3.1 Introduction

The Publications Office makes a distinction between systems used for office automation and administrative information systems on the one hand and systems used for production on the other hand. The quality of service and the constraints of availability are tighter for the production systems, since external partners with contractual agreements are already in place. Another important difference between these two types of information systems is linked to their architecture. The production information systems are usually spread over several servers and include complex production chains with processing on all nodes, whereas administrative and office automation systems are simpler and frequently use a one-to-many relationship between a server and its clients.

However, the same basic infrastructure is made available for both types of information systems, as described hereafter.

3.2 Application Architecture

The hardware and software architecture to use within a project is generally proposed by the contractor and should be compatible with industry best practices and the technical environment described in this document. This architecture has to be validated by the Publications Office before implementation.

For the design of this architecture, the contractor has to take the following aspects into consideration:

The Publications Office has deployed a DRP (Disaster Recovery Plan) which makes use of two different geographical sites and is based on the following principles:

- The DRP conforms to the Contingency Plan of the Publications Office
- The data replication between the two sites is synchronous
- Both sites are hosting "active" applications

UNIX is the recommended environment for production systems while office automation systems are normally hosted on Windows servers.

The Publications Office fosters professional methods of managing systems and therefore implements monitoring and measuring tools for systems and produces statistics on the use of computing resources and on the quality of service provided.

The Publications Office promotes the implementation of a three-tier architecture, using thin clients, application servers and mainly Oracle databases for reasons of performance, scalability and flexibility.

3.3 Data Exchange

In general, application processes exchange data either by mail or by FTP using a dedicated and in-house developed proprietary tool (WOOD – Worldwide Object Dispatcher).

Besides the exchange of data (files) between processes – possibly running on distinct servers – this tool allows the triggering of processes based on the arrival of a file in a predefined directory. The tool is written in Perl and uses normally FTP as underlying protocol but could theoretically use whatever standard file transfer protocol (e.g. scp). Due to the asynchronous character of this tool, the WOOD cannot guarantee the order of files exchanged. If sequencing is an issue, it must be managed at application level.

The Publications Office strongly advises the contractor to ask for practical implementation guidelines before starting any development that could require

integration/interaction with the WOOD. Contractors are also supposed to take care not to use reserved characters in file names.

Direct dependencies between servers (e.g. NFS mounts, database links, ...) are generally prohibited.

3.4 Security Provisions

A separate document describing the OP Minimum Security Requirements is attached to each Call for Tender for information processing system and/or services issued by the Publications Office. Any application, system or service that is introduced at the Publications Office has to comply with these requirements.

3.5 Other Provisions

The Publications Office promotes the virtualisation of services and the use of abstraction layers in order to increase flexibility. This implies in particular that:

- web-based applications must allow the deployment and the correct operation behind any http reverse proxy chain.
- applications must allow virtual hosting i.e. the binding of the application to only some of the IP addresses/hostnames of a multi-homed server
- applications must allow easy integration in the DRP of the Publications Office
- applications must be compatible with an MS Windows 2003/2008 terminal server architecture
- if the application depends on network services like DNS or LDAP, the server name or the IP address should not be hard-coded but should remain configurable.

Before being put into production, all of the Publications Office's core business applications, which are often interdependent, are tested for incompatibilities on dedicated machines.

Authentication mechanisms must use the available centralised directory server infrastructure (ECAS server of the Commission – AD server of the Publications Office - ...)

Data archiving and purging mechanisms have to be foreseen and implemented so that data volume growth does not degrade application performance nor backup/restore operations.

On the hardware side, the technical data processing infrastructure is currently made of several components that can be grouped into the following categories:

- Network and telecommunications
- Storage, backup and archiving systems
- Workstations and peripherals
- UNIX servers
- Windows servers

Details on these categories can be found in the relevant sections later in this document.

4 Network and Telecommunications

The Publications Office's staff is spread over several buildings. The Wide Area Network use leased lines, either over dark fiber high speed connections or connections to PSTN. The Publications Office's buildings use a common cabling system for the telephone as well as for the TCP/IP network for data. This structured cabling system uses copper connections category 5 (or higher) to desktop computers and high-end servers with a throughput of up to 10 Gbps and optical fiber connections for the backbone. Both networks deal with about 1 000 telephones and more than 1 500 Ethernet devices, and will continue to grow with potential new sites

In particular, connections with the contractors working for the Publications Office use leased lines or the EURO ISDN network for lower speed data transmission. The ISDN dialup service is in many installations serving as a backup solution for the leased line connection.

The most common application for the Publications Office remote access service is file transfer (FTP). Files are transferred via a FTP gateway installed in the Office DMZ.

The TCP/IP network is also interconnected with the network of the European Commission that is connected to the Internet and to the sTESTA network (TransEuropean Services for Telematics between Administrations). The sTESTA network allows the Publications Office to establish private connections with most of the national Administrations of the EU Member States and most of the EU Institutions. FTPStore is a service offered by DIGIT/Commission for sending and receiving files over the public Internet or via the sTESTA network. FTPStore is not offering any notification or monitoring of file movements.

All accesses that make use of the network of the European Commission (e.g. Internet accesses) have to comply with the general security rules of the Commission. This also implies that all mentioned networks are interconnected through stateful inspection firewalls. In particular, outbound direct internet access is NOT allowed. Applications that require internet access have to be "proxy aware".

Fax services are carried out by redundant Windows servers and are part of the automatic production chains in the daily publishing process. The Publications Office has reached a high level of integration of telephone and IP-messaging services.

