

Meridian

Technical Specifications



The Commonwealth

Debt Management Unit

Commonwealth Secretariat

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Contents

A.	Introduction.....	4
B.	Key Considerations.....	4
C.	System Overview.....	5
D.	Software Specifications.....	6
E.	Hardware Specifications.....	7
F.	Performance and System Security Recommendations.....	8
G.	Additional Considerations.....	9
H.	Contact Us.....	10

A. Introduction

The purpose of this document is to provide hardware and software guidelines for the implementation of Meridian. The document also outlines the key considerations to be taken into account when deciding on the hardware specification and configuration to fully benefit from the features provided in Meridian.

B. Key Considerations

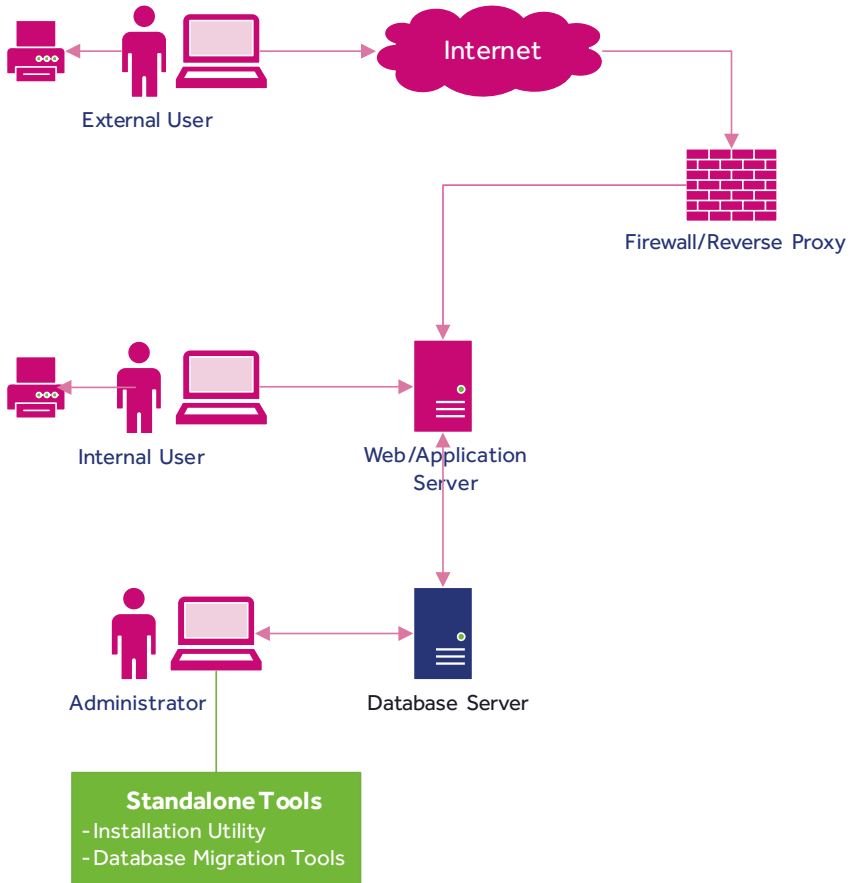
Meridian is a web-based application designed to offer scaling flexibility to meet specific institutional arrangements and IT infrastructure of user countries. When deciding on the hardware and set-up to be installed, countries should consider the following key factors:

- Network Bandwidth Performance;
- Total number of concurrent users who would connect to the Meridian database;
- Geographical distribution of institutions to have access to Meridian;
- Volume of data to be maintained in Meridian;
- Debt data auditing requirements.

The Commonwealth Secretariat strongly recommends that countries should aim at exceeding the minimum specifications provided in this document in order to optimally run Meridian and achieve high performance levels.

C. System Overview

The diagram below gives a high level overview of Meridian.



The above diagram is based on the basic requirement to illustrate the minimum configuration for Meridian. For member countries with few instruments, and all users having centralised local access to Meridian, the database and application server can be installed on a single physical server without compromising the performance of Meridian.

The N-Tier architecture used for developing Meridian gives the flexibility to deploy the system to multiple servers and will help to scale the system as per your site workload. For example, Web Server, Batch Operations Server, SMS/Email Server, File Server can be deployed on separate and dedicated hardware /software to improve performance and security of the installation.

D. Software Specifications

The table shows the software specification required for running Meridian.

Software	Specifications	Remarks
Server Operating System	<ul style="list-style-type: none">Standard Windows 2012 Server and higher with Web Server Role, ODP.Net.Net Framework 4.5.	
Workstation Operating System	Windows 7 (32/64) and higher	
Database	<ul style="list-style-type: none">SQL Server 2014 or higherORACLE 12c or higher	For small databases SQL Server Express/ ORACLE XE (11g) can be used.
Web Browser	<ul style="list-style-type: none">Google Chrome: 46.0Firefox: 41.0IE: 11	
End-User Reporting Tool	Telerik Reporting Tool (http://www.telerik.com/products/reporting.aspx) This tool is not provided as part of Meridian, Users will be required to purchase their own licences.	Only required if the site intends to develop its own reports in Meridian

Note: Please consult the Commonwealth Secretariat if you are considering using versions of the above mentioned software that were released after December 2016.

E. Hardware Specifications

The table below gives the hardware specifications required to run Meridian.

Component Type	Hardware Specifications		Remarks
	Large Site (more than 1,000 instruments)	Medium & Small (Less than 1,000 instruments)	
Web Server	Standard Windows Server 2012 (Web Server Role) RAM 32 GB or Higher Intel Xeon Processor 2.5+ GHz Hexa-Core (6 Physical + 6 Virtual) 64 bit (or higher) Disk Space 200 GB	Standard Windows Server 2012 (Web Server Role) RAM 16 GB or Higher Intel Xeon Processor 2.5+ GHz Quad-Core (4 Physical + 4 Virtual) 64 bit (or higher) Disk Space 100 GB	For small databases, the Web Server and Database Server may reside on one physical Server
Database Server	Standard Windows Server 2012 (App Server Role) RAM 32 GB or Higher Xeon Processor 2.5+ GHz Hexa-Core (6 Physical + 6 Virtual) 64 bit (or higher) Free Disk Space 1.5 TB	Standard Windows Server 2012 (App Server Role) RAM 16 GB or Higher Xeon Processor 2.5+ GHz Quad-Core (4 Physical + 4 Virtual) 64 bit (or higher) Free Disk Space 1.0 TB	For small databases, the Web Server and Database Server may reside on one physical Server
Workstation	Intel i5 Dual Core RAM 4GB Windows 7 (32/64) or higher	Intel i5 Dual Core RAM 4GB Windows 7 (32/64) or higher	

F. Performance and System Security Recommendations

The table below gives recommendations for implementing a high performance, secure and highly available system especially in environments that will have a number of institutions remotely accessing Meridian. These are however not mandatory for the core functioning of the system.

Sl. No.	Recommendation	Remarks
1	Install Web Server and Application Servers in a Web Farm configuration	Load balancing of the system and making it highly available.
2	Enable database mirroring and automatic backups.	This will allow the DBA or the site Administrator to restore the database in-case of a database failure.
3	Run anti-virus software on the file server.	The file server will have files uploaded from external sources, which can be infected by viruses. Running anti-virus software on the file server will provide protection against these infected files.

G. Additional Considerations

Meridian has a number of features that countries should also consider when deciding on the software and hardware requirements.

i. User Management Authentication and Authorisation

Meridian provides for both Windows and Database user authentication. Windows authentication will allow access to be setup through the existing institution domain configuration and policy.

ii. Alerts and Notifications

Meridian includes a comprehensive feature for alerts and notifications. The system requires the SMTP server and SMS message centre settings to configure this feature for email and text messaging respectively.

iii. Audit

Audit trails maintain a record of changes in data and/or activities done in system by various users or by system triggered programs. Meridian supports following type of audit trails to assist users in performing their audit functions:

- User and System Activities Trail: This trail tracks activity details of various users and system triggered programs in the front end application.
- Audit Data Trail: System allows user to capture or modify data at entity level therefore this trail tracks every change made in data maintained at entity level.
- Workflow Trail: This trail tracks history of every workflow status for each entity in the system

The data and actions to be audited are customisable and it should be noted that sufficient space should be catered for if users have extensive audit trail needs.

H. Contact Us

If you require more information or clarity on this specification, please feel free to contact us at dms@commonwealth.int

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