YuniquePLM™ System Hardware & Software Requirements Release 6.0.0

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The information in this document is correct to the date of its release, but is subject to change.

Version: 1.00	Date: 3/2013	Description: Initial Release
Version: 1.10	Date: 9/2013	Description: V5.1 update
Version: 1.11	Date:11/2013	Description: Revisions
Version: 1.12	Date: 4/2014	Description: Revisions
Version: 1.20	Date: 10/8/2014	Description: Revisions





YuniquePLM™Deployment Infrastructure

Many of our customers implementing YuniquePLM™ maintain multiple environments.

Typically there are up to four (4) environments.

Minimally, the <u>Development</u> and <u>Production</u> environments are required.

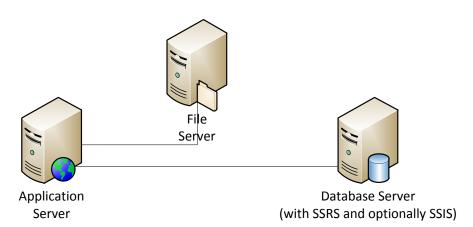
For Best practice we recommend the following environments:

- Integration: An environment for testing the latest release builds. Developers test their deployed changes in this environment.
- Development: An environment for new configurations and development efforts.
- Staging/QA: Typically a close replica of the Production environment where new changes can be tested and approved, prior to production release.
- Production/Live: This is the environment where all of the day-to-day activities take place.

Minimum Eligibility Requirements

Each environment typically consists of three servers:

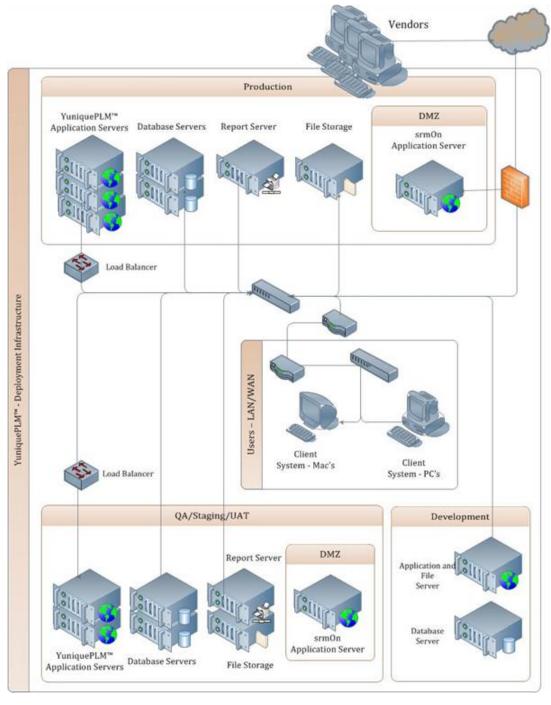
YuniquePLM™ Building Blocks



- Application Server: Configured with IIS to host the YuniquePLM™ application
- File Server: Image Repository
- Database Server: A Server hosting the SQL Server Database, SQL Server Reporting Services and SQL Server Integration Services



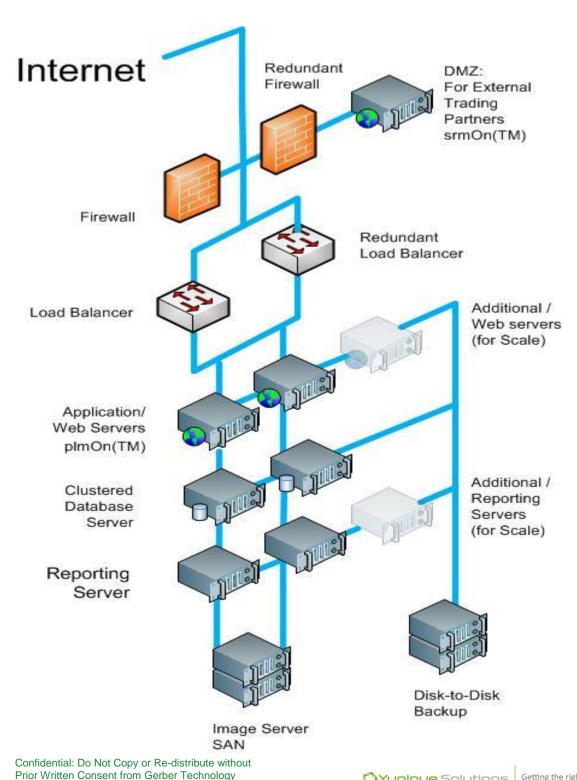
Sample Large Scale Implementation





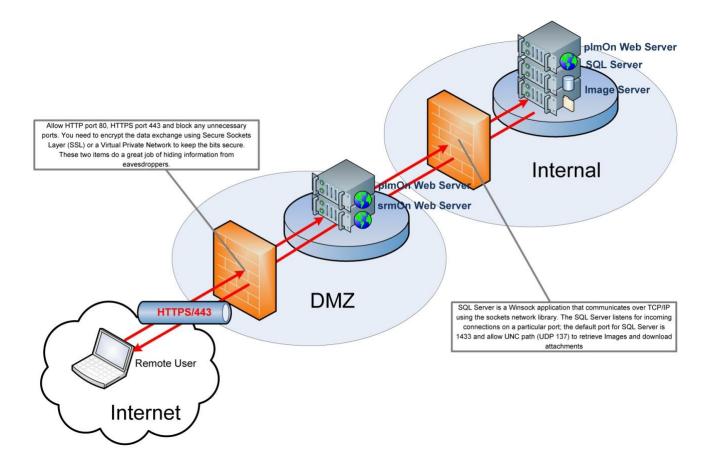
YuniquePLM™Network Architecture

YuniquePLM™runs on Microsoft technologies including Windows Server 2012, 22008R2, IIS, SQL Server DBMS. These technologies offer high availability and scalability. We recommend database clustering, web farm, network load balancing clusters and installing RAID drives for high availability.





Possible YuniquePLMTMConfiguration Secure Remote Internet Access using a DMZ Internal Private Network Access





Large System Configuration (100+ Users) - YuniquePLM™

	Database Server Configuration		Web Server Configuration
DB Server	Recommended	Web Server	Recommended
CPU	Intel Xeon – 8 Cores 2.4 GHz +	CPU	Intel Xeon – 4 Cores 3.0 GHz +
Memory	128 GB	Memory	16 GB
Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB Storage: RAID-10 (15k RPM SCSI) – TBD	Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB
Preferred O/S	Windows Server 2012R2 Std.	Preferred O/S	Windows Server 2012R2 Std.
Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.	Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.
Network Connection	4x1 Gigabit Ethernet - teamed	Network Connection	4x1 Gigabit Ethernet - teamed
Data Engine	64-bit SQL Server 2008R2 Std. or SQL 2012 Std. with Reporting and Integration Services	Data Engine	n/a
Other		Other	IIS 7.5 (2008R2) , 8.0 (2012), 8.5 (2012R2) .NET Framework 4.5, AJAX V1.0
Physical	V	Physical	V
Virtual	X	Virtual	V
 For best performance the Database Server should be a dedicated physical server and not host other databases or applications. It must not be hosted on the same server as the Web Server or the File Server. The Database Server should not be installed in a virtual server for optimum performance.¹ A SQL Server license and SQL Client Licenses are required for each YuniquePLM™ User License, or SQL Core Licenses can be used. 		physical server and in hosted on the same The Web Server can	te the Web Server should be a dedicated not host other applications. It must not be server as the Database or File Server. be installed in a virtual server.¹ dows Server Operating System.



File Server Configuration



Report Server Configuration (Recommended for best Performance)

File Server	Recommended	Report Server	Recommended
CPU	Intel Xeon – 4 Cores 3.0 GHz +	CPU	Intel Xeon – 4 Cores 3.0 GHz +
Memory	16 GB	Memory	32 GB
Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB Storage: RAID-10 (15k RPM SCSI) - TBD	Storage	O/S: RAID-1 (15k RPM SCSI) - 100GB Storage: RAID-10 (15k RPM SCSI) - TBD
Preferred O/S	Windows Server 2012R2 Std.	Preferred O/S	Windows Server 2012R2 Std.
Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.	Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.
Network Connection	4x1 Gigabit Ethernet - teamed	Network Connection	2x1 Gigabit Ethernet - teamed
Data Engine	n/a	Data Engine	64-bit SQL Server 2008R2 Std. or SQL 2012 Std.
Other	IIS 7.5 (2008R2) , 8.0 (2012), 8.5 (2012R2)	Other	SQL Server Reporting Services
Physical	√	Physical	V
Virtual	V	Virtual	V
For best performance the File Server should be a dedicated physical server and not host other applications. It must not be hosted on the			te the SQL Reporting Server should be a

- server and not host other applications. It must not be hosted on the same server as the Database Server or the Web Server.
- o The File Server can be installed on a virtual server. 1
- o A Windows Server Client License is needed for each YuniquePLM™ User License. IIS is part of the Windows Server Operating System.
- dedicated server and not host other databases or applications.
- A SQL Server license and SQL Client Licenses are required for each YuniquePLM™ User License, or SQL Core Licenses can be used.
- The SQL Reporting Server can be installed on a virtual server.¹

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Medium System Configuration (21-99 Users) - YuniquePLM™



Database Server Configuration



Web & File Server Configuration

DB Server	Recommended	Web Server	Recommended
CPU	Intel Xeon – 8 Cores 2.4 GHz +	CPU	Intel Xeon – 4 Cores 3.0 GHz +
Memory	64 GB	Memory	16 GB
Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB Storage: RAID-10 (15k RPM SCSI) - TBD	Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB Storage: RAID-10 (15k RPM SCSI) - TBD
Preferred O/S	Windows Server 2012R2 Std.	Preferred O/S	Windows Server 2012R2 Std.
Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.	Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.
Network Connection	4x1 Gigabit Ethernet - teamed	Network Connection	4x1 Gigabit Ethernet - teamed
Data Engine	64-bit SQL Server 2008R2 Std. or SQL 2012 Std. with Reporting and Integration Services	Data Engine	n/a
Other		Other	IIS 7.5 (2008R2) , 8.0 (2012), 8.5 (2012R2) .NET Framework 4.5, AJAX V1.0
Physical	V	Physical	V
Virtual	X	Virtual	V
 For best performance the Database Server should be a dedicated physical server and not host other databases or applications. It must not be hosted on the same server as the Web Server or the File Server. The Database Server should not be installed in a virtual server for 		dedicated physical s not be hosted on the The Web and File Se	te the Web and File Server should be a server and not host other applications. It must be same server as the Database Server. Erver can be installed in a virtual server. Client License is needed for each YuniquePLM™

User License.

IIS is part of the Windows Server Operating System.



optimum performance.1

Report Server Configuration (Recommended for best Performance)

Report Server	Recommended	
CPU	Intel Xeon – 4 Cores 3.0 GHz +	
Memory	32 GB	
Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB Storage: RAID-10 (15k RPM SCSI) - TBD	
Preferred O/S	Windows Server 2012R2 Std.	
Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.	
Network Connection	2x1 Gigabit Ethernet - teamed	
Data Engine	64-bit SQL Server 2008R2 Std. or SQL 2012 Std.	
Other SQL Server Reporting Services		
Physical	V	
Virtual	V	

A SQL Server license and SQL Client Licenses are required for each

YuniquePLM™ User License, or SQL Core Licenses can be used.

- For best performance the SQL Reporting Server should be a dedicated server and not host other databases or applications.
- A SQL Server license and SQL Client Licenses are required for each YuniquePLM™ User License, or SQL Core Licenses can be used.
 The SQL Reporting Server can be installed on a virtual server.¹

¹ See notes







Small System Configuration (1-20 Users) - YuniquePLM™



Database, Web, File, and Report Server Configuration

DB Server	Recommended	
CPU	Intel Xeon – 8 Cores 2.4 GHz +	
RAM	64 GB	
Storage	O/S: RAID-1 (15k RPM SCSI) – 100GB Storage: RAID-10 (15k RPM SCSI)	
Preferred O/S	Windows Server 2012R2 Std.	
Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.	
Network Connection	4x1 Gigabit Ethernet - teamed	
Data Engine	64-bit SQL Server 2008R2 Std. or SQL 2012 Std. with Reporting and Integration Services	
Other IIS 7.5 (2008R2) , 8.0 (2012), 8.5 (2012R2) .NET Framework 4.5, AJAX V1.0		
Physical	V	
Virtual	V	

- For best performance the Database, Web and File Server should be a dedicated physical server and not host other applications.
- The Database, Web and File Server can be installed in a virtual server.¹
- A SQL Server license and SQL Client Licenses are required for each YuniquePLM™ User License, or SQL Core Licenses can be used.
- A Windows Server Client License is needed for each YuniquePLM™ User License.
- o IIS is part of the Windows Server Operating System



User Workstation Requirements - YuniquePLM™



PC Workstation Configuration



MAC Workstation Configuration

User Workstation	Recommended	User Workstation	Recommended
Processor	2.5 GHz Intel i3 or better	Processor	2.5 GHz Intel i3 or better
Memory	8 GB	Memory	8 GB
Network	Gigabit Ethernet	Network	Gigabit Ethernet
Monitor	17"	Monitor	17"
Monitor	1280x1024	Monitor	1280x1024
Resolution		Resolution	
Operating System	Windows 7 Professional w/SP1 Windows 8 Professional Windows 8.1 Professional	Operating System	Mac OS X 10.4 or Higher
Web Browser	Internet Explorer 9.0 or Higher	Web Browser	Safari (as included with Mac OS X)
Other Software	Adobe Reader XI Adobe Illustrator CS5.5 or CS6 Adobe Photoshop CS5.5 or CS6	Other Software	Adobe Reader XI Adobe Illustrator CS5.5 or CS6 Adobe Photoshop CS5.5 or CS6
Physical	٧	Physical	V
Virtual	NA	Virtual	NA



Staging System Configuration (Basic) - YuniquePLM™



Database, Web, File, and Report Server Configuration

DB Server	Recommended
CPU	Intel Xeon – 4 Cores 3.0 GHz +
RAM	16 GB
Storage	500GB +
Preferred O/S	Windows Server 2012R2 Std.
Compatible O/S	Windows Server 2008R2, 2012, 2012R2 Std.
Network Connection	Gigabit Ethernet
Data Engine	64-bit SQL Server 2008R2 Std. or SQL 2012 Std. with Reporting and Integration Services
Other	IIS 7.5 (2008R2) , 8.0 (2012), 8.5 (2012R2) .NET Framework 4.5, AJAX V1.0
Physical	V
Virtual	V

- The Database, Web and File Server can be installed in a virtual server.¹
- A SQL Client License is needed for each YuniquePLM™ User License, or SQL Core Licenses can be used.
- A Windows Server Client License is needed for each YuniquePLM™ User License.
 - IIS is part of the Windows Server Operating System

¹ See notes



NOTES

- Windows, MAC, Photoshop, and Illustrator are registered trademarks of Microsoft, Apple, and Adobe, respectively. No endorsement
 is implied by their appearance in this document.
- Supported Virtual Server hosts include VMware and Hyper-V.
- Unless otherwise noted, newer Service Pack releases to those mentioned are supported and required.
- The Windows Desktop Experience feature in Windows Server 2008R2 and Windows Server 2012 and 2012R2 must be installed on the Web server.
- It is recommended that Windows Server and Microsoft SQL be installed in English for remote installation and support purposes.
- Disk space requirements for the database and file server data will vary. The recommended minimum space for the database should be at least 100GB, and the minimum space for the file server data should be at least 500GB.
- For User Workstation configurations without Adobe Illustrator or Photoshop, the memory requirement can be reduced to 4GB
- Hardware configurations listed in this document are based on vendor offerings at the time of publication.
- Virtual Host servers should not be over committed (memory, processors), as this can adversely affect performance. Also virtual host servers with I/O intensive virtual servers.
- Virtual disk drives should not be created with "Thin Provisioning" or "Dynamic Expanding", as this can adversely affect performance.
- Use of NAS or SAN devices can adversely affect performance if the device has high latency, low performance disk drives, heavily
 utilized processor(s) and/or network connection(s). Virtual servers utilizing NAS or SAN devices for their system disks can exhibit
 slow performance if disk swapping occurs (virtual server with undersized memory) or the NAS or SAN device encounters heavy
 utilization.
- It is recommended that Proxies, Application Accelerators, Traffic Managers, or other optimization devices not be used with YuniquePLM, as some of these devices can cause Microsoft IIS and YuniquePLM to fail.