



# WorkflowGen 6.3 Features and Technical Requirements

Updated November 1, 2016

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# Overview

This document provides a detailed list of WorkflowGen features and technical requirements, as well as information on configurations and scalability, and examples of usage metrics.

# End-user module

## User Portal

- 100% web-based .NET 4 application
- Single sign-on and seamless automatic authentication
- Intuitive — no training required
- Interface supports multiple languages (double-byte compliant)
- Users can change language, time zone, and password directly within the Portal
- Customized workflow portal based on user rights and preferences
- Smart portal with summary of current user activity for all processes (ongoing, to do, late, closed, etc.)
- Real-time monitoring with graphical view of the workflows
- Direct access to statistics and reports with graphical views
- Quickly access the forms with the Quick View feature
- Approve dozens of requests in seconds with the Quick Mass Approval feature
- Comprehensive audit trail
- Post and follow user comments for ongoing requests
- Fast switching from user to manager mode for additional privileges and rights
- Single- or multi-process view
- Multiple-criteria search for requests and actions
- Direct access to specific requests (quick search)
- Multiple sort options for actions and requests
- Use form data as search criteria
- Customize the display of workflow data
- Automatic detection of URLs and email addresses
- Sort columns of statistics, search results, and follow-ups with a simple drag-and-drop
- Delegation of tasks for user-defined period of time
- Display common process data in User Portal lists and multi-process quick search
- Common process data are supported in the follow-up and statistics tab

## Dashboard

- From the Views list on the User Portal home page, click the View icons to display the views (grids, charts, statistics) in floating panels that you can arrange according to your needs

## Alerts

- Event-based email notification (to do, to assign, delay, request closed, etc.)
- Text or HTML format email notifications
- Email notifications, including attachments
- Customizable email templates
- SMTP protocol compliant with Exchange, Lotus, etc.
- Direct launch of actions to do from email notification
- Receive notifications of the latest user comments

## eForms

- Fill out forms online within the web browser
- Use web forms (supports AJAX)
- Form fields integration with external applications and databases
- Attach files to forms

## Advanced View

Advanced View enables users to easily create rich customized reports by using process data.

- Access Advanced View from the Search tab
- Sort and filter data via the column header
- Group data with a simple column header drag-and-drop
- Reorganize columns
- Change column size
- Create a customized footer with calculations

- Edit existing columns
- Create a new column using the built-in formula editor (in easy or expert mode) using data from other columns
- Save an Advanced View as a view accessible from the User Portal and share it with other authorized participants
- Export a customized view and associated data to multiple formats (Excel, XML, CSV, JSON, HTML, TSV)
- Click “Link” to get the view’s URL or embed the view in your own web applications

## Charts

- Advanced View reports can be displayed as charts (column, bar, pie, etc.) and shared as views
- The Custom Charts feature lets you create customized charts using JavaScript and any chart library

## Customization

- Manage customized views (search results, statistics)
- Add links to external web contents to provide additional information
- Add a custom application top banner
- Embed workflow portal in existing applications
- Create your own “skins” to customize the User Portal look and feel



# Mobile applications

WorkflowGen Mobile lets users who have implemented the WorkflowGen BPM/workflow software on their corporate web servers access the WorkflowGen portal and perform their workflow actions remotely via their iOS and Android devices. These apps are available free to all WorkflowGen users.

## Requests screen

- Display requests you can launch sorted by category
- Launch a new request
- Display your ongoing and closed requests
- Go to the requests follow-up to get all the information on a request in its current status: request data, actions history, actions to do, attachments, web form static view, associated comments, graphical follow-up, etc.
- Search your ongoing or closed requests filtering by process, categories, requester

## Actions screen

- Display your to-do or closed actions
- Launch an action
- Go to the requests follow-up to get all the information on a request in its current status: request data, actions history, actions to do, attachments, web form static view, associated comments, graphical follow-up, etc.
- Search your ongoing or closed actions filtering by process, categories, requester

## Teams screen

- Display your to-do or closed team actions
- Launch a team action
- Go to the requests follow-up to get all the information on a request in its current status: request data, actions history, actions to do, attachments, web form static view, associated comments, graphical follow-up, etc.
- Search your ongoing or closed team actions filtering by process, category, requester

## Assignments screen

- Display your to-do or closed action assignments
- Assign an action
- Go to the requests follow-up to get all the information on a request in its current status: request data, actions history, actions to do, attachments, web form static view, associated comments, graphical follow-up, etc.
- Search your ongoing or closed assignments filtering by process, category, requester

## Views

- Display your saved views of search results and charts

## Search screen

- Search for an ongoing or closed request by entering the request number
- Display the details of the request searched

## Delegations screen

- Delegate actions associated with a request to another person for a defined period of time
- Display and manage the active delegations and all the delegations created

## Optimized web forms layout

- Users can fill out and submit the forms related to their actions via their iOS or Android devices
- Web form layout is automatically optimized at runtime according to the device resolution (smartphones, tablets)

# Built-in web form designer

## Instant form creation

- Fully web-based — no plugins required
- Seamless integration in WorkflowGen
- Intuitive WYSIWYG interface
- On-the-fly customized appearance of form fields, sections, and buttons
- Drag-and-drop form fields and sections
- Ready-to-use sections for extra fast design
- Web form layout automatically optimized at runtime according to device resolution (smartphones, tablets)
- Multilingual management
- ASP.NET code editor

## Powerful tools

- Grid View with calculations
- Advanced attachment management
- Data binding (SQL, web service, XML)
- Dependent lists
- Field management (required/read-only/hidden activated based on custom conditions)
- Field validations (RegEx, range, custom, compare)

## Interactive workflow view

- Seamless integration with the form designer
- Visually define the behaviour of the form
- Fields and sections can be defined as required, read-only, or hidden
- Map “in” data with macros, process data, or a default value
- Map “out” data as conditions for audit trail and reporting

## Reusability

- Section/field duplication
- Save a custom section/field as a reusable template
- Full customization of form fields and form layout
- Change CSS file for advanced customization
- .NET web forms generated on-the-fly (editable in Visual Studio)

# .NET web form

## Unleash form features

- Use the graphical interface of Microsoft Visual Web Developer Express or Visual Studio
- Start from scratch or reuse the .NET code generated on-the-fly by the WorkflowGen built-in form designer
- Leverage your .NET skills to add powerful features
- Integrate AJAX and jQuery add-ons
- Form configuration management
- Reuse your business objects

## WorkflowGen integration

- Once the form is created, easily declare it in your WorkflowGen processes
- Required and read-only fields are managed in the process definition — no need for web form coding

## Main features

- Field validation management
- Field colorization management
- File attachment management
- Grid View management
- Two .NET web form creation modes: Simple (without programming) and Advanced (for total control of the code and the data)

# Global list management

## Facilitate administration of common process data

- Global list management lets authorized users easily create and manage lists of data via the WorkflowGen web administration module for use in different process forms.
- Global data lists can be created manually, imported, or defined via a connection from an existing third-party database. They are then used by the process managers who can bind them in their forms and workflows without programming, regardless of their administration rights.
- Enterprise-relevant data not necessarily managed in an ERP or CRM can enrich company workflows with a decentralized administration to the managers of these data themselves.

## Global list administration

- Create a new list
- Define elements and columns in a list (text, date, and numeric formats)
- Import a list from a file or by copy/paste
- Create a list from an SQL query or a connection string
- Duplicate an existing list
- Refresh lists
- Export a list in XML or CSV format
- Support multilingual data lists

## Global list uses

- Bind a list from a field of combo/list type via the WorkflowGen built-in form designer
- Connect lists
- Sort items in lists
- Link lists with other lists or form fields
- Operate filters: column, comparison operators, filter by field, default filter value if the value is empty

# Workflow features

## Workflow functions

- Mix human-based and automatic actions in the workflow
- Create any business rules based on workflow data
- Create conditions or exceptions based on workflow data or ready-to-use macros
- Customize contents and layout of event-based email notifications (SMTP)
- Automatic escalation based on workflow data
- Enable delegation for workflow participants
- Create complex workflows with sub-processes
- Customize and secure display of data in user interface
- Ready-to-use document validation application
- Attach any kind of file to workflows
- Save-as-draft mode for forms
- Define workflow data stored in database without programming
- Use all assignment methods (automatic, self-service, dynamic, etc.)
- Parallel and/or serial routing
- Automatic synchronization action
- Define lead times for the entire workflow
- Define lead times for each action at design time or runtime
- Launch a workflow from a third-party application
- Unique request IDs for all processes
- Relative request IDs per process and/or per year and month
- Time zone management
- Action completion in background mode
- Action multi-instance management
- Integrated Remote Approval service lets users approve requests by email reply from a mobile device

## Action assignment methods

- Manual (the current user selects a user to perform the next action)
- Automatic (using workflow data containing the user)
- Self-service (the first member of a team who takes the action handles it)
- By a coordinator who dispatches
- By the manager
- By the person who performed a previous action

## Ready-to-use workflow applications

- .NET web form support
- XMLTODATABASE: Export .NET web form data into one or multiple databases
- GETUSERSFROMDIR: Query the directory at runtime to retrieve user list for dynamic assignments and/or email notifications
- XMLTRANS: Transform XML files into other formats (EAI)
- RAISEEXCEPTION: Cancel one or several actions in the running request
- MERGEFORM: Merge multiple form data files into one file and merge form archives into a target form archive
- COPYDATA: Copy data from a parameter to a different data
- Remote Approval: Approve user requests by email reply from a mobile device



# Process administration

## Process design

- 100% web-based .NET 4 application
- Implement workflows graphically in HTML5 or Flash without programming
- Process data management (text, numeric, date, time, file)
- Action management (human, automatic, sub-process)
- Notification management (customizable event-based notifications)
- Application management (eForms, import/export, web services, alerts, etc.)
- Roles associated with users and/or groups and/or directories
- Category management (organize processes by category)
- Display automatic report of process definition with debug feature
- Compliance with Workflow Management Coalition (WfMC) standards
- Test workflows on production server

## Process management

- Organize processes within secured folders for easy decentralization
- Delegate process administration per folder
- Import/export process definition in XPD (XML-based standard)
- One-click deployment of processes from development to production server
- 24/7 process availability: update workflow definition of live processes
- Versioning of workflows
- Use different statuses to manage workflows (active, test, archived, etc.)
- Organize workflows in one or multiple categories for end-users
- Duplicate an existing workflow to create a new one

# Security

## Authentication

- One-way hashing password mode for greater security
- Automatic account locking function after specified number of failed login attempts
- Password reset function for lost or forgotten passwords
- Active Directory authentication (basic or integrated)
- Applicative authentication (passwords are managed in a database)
- LDAP directory authentication
- Integration with existing single sign-on system
- Directory synchronization
- Timeout sessions supported
- Logout management

## Communication

- SSL encryption

## Forms

- Secure access to form fields based upon profile and action

# User management

## Directory management

- Creation of multiple directories (for departments, clients, partners, etc.)
- Each user can have more than 20 reusable properties in the workflows
- Group management
- Hierarchy management
- Query existing directories to dynamically create virtual groups
- Workflow history management for deleted users
- Detailed report on user activity
- Replace a user with another one

## Automatic directory synchronization

- Active Directory
- CSV text files
- LDAP native queries
- SQL (via text files)

# Participant management

- Create global participants shared by multiple workflows
- Role-based workflow participants
- Use multiple profiles to grant access to the features of the product
- Define participants as single users, groups, coordinators, or directories
- Enable process supervisors to reassign actions, cancel requests, view statistics
- Limit process supervisor scope for specific requests
- Enable user rights on request comments

# Data management

## Data persistence

- Store workflow data (text, numeric, date, time) in SQL Server or Oracle
- Store associated files on the current web server, on a remote file server, or within the database system
- Database size and network bandwidth usage optimized

## Export

- Export process and form data anytime at runtime
- Documented SQL views to directly query the database
- Ready-to-use SQL server DTS job to replicate workflow data into another database

## Backup

- Standard SQL backup for data stored in the database
- Standard file server backup for file data
- Option to store process file data (including attachments) in the database to perform online backup without service interruption

# Statistics and reports

- Ready-to-use statistics and scoreboards with graphics
- Export to CSV format
- Generate statistics by using workflow data as criteria
- Activity reporting per request, action, process, participant
- Customizable reports with reporting module and business intelligence tool

# Localization

- End-user and administration modules available in English, French, German, Spanish, Italian, and Portuguese
- Multilingual form management
- Double-byte compliance
- Multiple time zone management
- Editable resource files for easy creation of additional languages

# Integration

## Portal integration

- Integrate ready-to-use workflow portlets into the User Portal via XML RSS technology
- Add links to third-party applications to directly launch workflows
- Easy launch of a process from a URL
- Add custom banners to the WorkflowGen end-user module with logos and links

## Database integration

- Export process and form data to databases via SQL commands

## Developer kit

- Create web services to handle actions in the workflow
- Trigger workflows from third-party applications
- Use third-party applications in workflows
- Dynamically generate documents from workflow data
- Export documents and data to third-party applications
- Import/export data between workflows and third-party applications

## Web service API

- Access requests and actions data and statuses from third-party applications in real time via web services
- Contents of the WorkflowGen portal are available as RSS feeds
- Users are able to syndicate/register these feeds in any web portal solution or any RSS-compliant tool, as well as widgets



## Other integration examples

- SAP
- PeopleSoft
- IBM AS/400
- Salesforce.com
- Any back-end systems with COM, .NET, or web service-like interfaces

# Backup configuration

## Web server

- Standard backup for web application
- Standard backup for data files on the server (must be synchronized with database backup)

## Database server

- Standard database server backup

# Boost your workflow project

## Ready-to-use customizable applications

- Source code provided
- Doc Export: Exports documents from workflows to an external file server or shared network for archiving
- Doc Listener: Launches a workflow when a document arrives on a file server or shared network
- Mail Listener: Launches a workflow when an email arrives in a specific inbox

## Ready-to-use customizable workflow templates

- Workflow definitions and forms provided
- Leave application
- Expense report
- IT clearance application
- Investment application
- Work order
- Corrective action
- Save internal procedure validation
- Helpdesk ticket management
- Master data management: New product creation

## Methodology and best practices

- Project and change management
- Process inventory
- Process specifications
- Best deployment practices
- Online documentation for installation, upgrade, Administration Module, and User Portal
- Knowledge base with over 400 articles

# Technical components

## Workflow engine

The workflow engine comprises:

- A .NET web application for end-users (User Portal)
- A .NET web application for administrators and process managers
- An SQL relational database containing the process definition, request follow-up, and user management (which can be synchronized with existing directories)

## WorkflowGen database

The WorkflowGen database contains:

- User management
- Process definition
- Follow-up information about ongoing and closed processes, as well as significant workflow-related data (approvals, amounts, documents, etc.)
- Files (such as PDF documents) are stored on the server and auto-archived in chronological order

## Applications

Applications used to implement actions:

- .NET web form management
- Form data export to SQL database
- Retrieve users from a directory to perform an action or for email notification
- XML transformation (for EAI features)
- RAISEEXCEPTION to cancel one or many actions
- Launch a new request from within an ongoing request
- Develop your own workflow applications with the WorkflowGen development kit
- Re-use existing compatible web services

- Dozens of ready-to-use applications with source code examples available in the WorkflowGen Resource Center

# End-user technical requirements

## User portal

### Operating systems

- Windows Vista
- Windows 7
- Windows 8 / 8.1
- Windows 10
- Mac OS X

### Web browsers

- Internet Explorer 9 or higher
- Edge
- Firefox
- Safari
- Chrome

### Display

- 1200 × 800 or higher resolution

## Mobile applications

- iOS 5.0 or later
- Android 4.1 or later
- WorkflowGen version 5.5.3 or later installed on a web server that can be accessed via a VPN, extranet, or intranet
- WorkflowGen 6.0 or later required to view process graphical follow-up and display custom views
- The WorkflowGen Web Service API must be configured and accessible
- A valid WorkflowGen web application URL (e.g. [https://\[server\]/wfgcn](https://[server]/wfgcn))
- A valid WorkflowGen username and password

**Note:** The WorkflowGen Mobile applications are currently not compatible with a WorkflowGen setup that uses form authentication security mode.

## Integrated workflow and form designer

### Operating systems

- Windows Vista
- Windows 7
- Windows 8 / 8.1
- Windows 10
- Mac OS X

### Web browsers

- Internet Explorer 9 or higher
- Edge
- Firefox
- Safari
- Chrome

### Display

- 1366 × 768 or higher resolution suggested

## Web form developer (Visual Web Developer and Visual Studio)

- Visual Studio 2015
- Visual Studio 2013
- Visual Web Developer 2012 Express Edition
- Visual Studio 2012
- Visual Web Developer 2010 Express Edition
- Visual Studio 2010
- Visual Web Developer 2005 Express Edition

- Visual Studio 2005
- Any .NET 4 or later compatible integrated development environment

## Operating systems

- Windows Vista
- Windows 7
- Windows 8 / 8.1
- Windows 10



# Web server technical requirements

## Operating systems

- Windows Server 2008, 2012, or 2016 (all releases)
- Windows 7 / 8 / 8.1 / 10 (recommended for development environments only)

## Web server

- Microsoft IIS 7 or higher
- .NET Framework 4 or higher

## .NET 4 support

- Support for .NET web services and web forms developed by the client
- WorkflowGen software itself requires .NET 4 Framework

## Minimum hardware configuration

### Hardware

- Dual-core processor
- 4 GB RAM
- SATA hard disk with 40 GB free

### Database servers

- Microsoft SQL Server 2008, R2 and Express Edition
- Microsoft SQL Server 2012, R2 and Express Edition
- Microsoft SQL Server 2014 and Express Edition
- Microsoft SQL Server 2016 and Express Edition
- Oracle 10g

- Oracle 11g and R2
- Oracle 12c

See [Suggested hardware configurations](#) on page 35 for server specifications based on your planned usage.

# Suggested hardware configurations

## Basic configuration (Development/QA environment)

Web server and database installed on 1 server

- Dual-core processor
- 4 GB RAM
- SATA hard disk with 40 GB free
- Windows Server 2008 or 2012 (all versions)
- SQL Server 2008, 2012, or 2014 (all versions), or Oracle 10+

Example of usage

- 500 potential users
- 50 requests/actions per day

## Recommended configuration

Web server

- Quad-core processor
- 8 GB RAM
- High-speed hard drive array
- Windows Server 2008 or 2012 (all versions)
- SQL Server 2008, 2012, or 2014 (all versions) or Oracle 10+

Example of usage

- 5000 potential end-users
- 500 requests/actions per day

# High availability configuration (web farm)

## 2 web servers in a web farm architecture

- Quad-core processor
- 8 GB RAM
- High-speed hard drive array or SAN
- Windows Server 2008, 2012, or 2014 (all versions)

## 2 database servers: 1 master and 1 slave

- Quad-core or more processor
- 8 GB RAM
- High-speed hard drive array
- Gigabit Ethernet
- SQL Server 2008, 2012, or 2014 (all versions) or Oracle 10+

## NAS/SAN appliance

- High-speed hard drive array
- Gigabit Ethernet

## Example of usage

- 10,000 potential end-users
- 1000 requests/actions per day

# Authentication methods and directory synchronization requirements

## Authentication methods

- Integrated Windows or IIS Basic (Active Directory)
- Applicative (WorkflowGen)
- Forms
- Custom (SSO: single sign-on)

## Directory synchronization

- Active Directory (supports all releases of Windows Server 2008, and 2012)
- LDAP-compatible directory
- Text files

# Notifications and XML syndication requirements

## Email notifications

- Email notifications are sent via SMTP protocols (Exchange and Lotus Notes are compatible)
- Any email client can receive WorkflowGen notifications
- Email layout and content can be customized in HTML or plain text
- Full logging of notifications

## XML syndication

- WorkflowGen provides an XML RSS feed (called the “Portlet”) to embed existing web portal with WorkflowGen data

# Database and file repository growth

The growth of the database and the file repository content (for form archives, form state content, and document attachments, if used) is directly related to the number of actions in a process, and the amount of data captured on the forms at each action (each step in the process).

The amount of data captured furthermore depends on if you want to capture the data in all of the actions in detail, or you want to capture only the final copy of the data at the end of each process (the final result). Capturing all action data will provide the ability to trace back in a very granular way to each step in the process to see the data entered at each step. Typically this has an impact requiring about 3 to 10 times more disk space than capturing only the ending result data. Note that even if granular form data is not maintained, WorkflowGen always provides the ability to see who took what step, at what date and time, during the process; only the form data content would be purged for previous steps before the final closing step in the process.

An approximation would be to multiply the number of processes launched, actions per process, and estimates of data capture on a yearly basis.

## Example with full data archiving

### Assumptions

- 10 actions per process on average over all processes in production
- 10,000 process launches per year ( $\times 10 = 100,000$  actions)
- Typical average data stored in the database per action of about 3K
- Typical average form snapshot archive and state content per action of about 50K
- Assuming an average attachment size of 300K per requests (some actions have no attachments)

### Results

- Approximately 300 MB of database growth per year
- Approximately 5 GB of file repository growth per year for the form archive and content
- Approximately 3 GB of additional file repository for attachments

## Example with limited data archiving

### Assumptions

- 10 actions per process on average over all processes in production
- 10,000 process launches per year ( $\times 10 = 100,000$  actions)
- Typical cumulative one-time data stored at process end of about 5K

## Results

- Approximately 50 MB of database growth per year
- Approximately 500 MB of file repository growth per year for the form archive and content
- Approximately 300 MB of additional file repository for attachments

These results are examples only and can vary greatly based on your specific requirements.



# Scalability and availability

- Sessionless and stateless web application
- No server-side stay-in-memory objects
- File data saved using the file or database system
- Database size is small and network bandwidth usage is optimized
- Deploy WorkflowGen in a web farm environment with load balancing
- Use multiple servers for web applications, files, and databases
- Use a real-time replicated secondary database to reduce server response time (database scaling feature)

## Scalability features

### Sessionless and stateless web application

- Totally compliant with load balancing and web farm architectures
- Improves web server memory usage

### Product tuning

WorkflowGen offers several options to optimize storage size and response time according to your constraints. For example:

- You can reduce the amount of data displayed on the User Portal home page
- You can define process data to keep all the versions of the data value by actions or only the late one

### File data storage

You can configure WorkflowGen to store file data in the database or in the file system. Database storage simplifies the file data administration and backup (without interruption of service).

File system storage provides the following benefits:

- Optimizes the database size and database server CPU load
- Reduces the network bandwidth usage between the web server and the database server
- File data can be stored in a local or remote folder

## Web farm

WorkflowGen supports web farm configuration; you can set up two or more web servers to handle workflow requests. Web farm configuration improves the performance and offers high availability.

## Database scaling

WorkflowGen provides a unique way to dramatically improve the response time of your processes thanks to database farms. In addition to the “Master” WorkflowGen database, you can set up another “Slave” (or read-only) database that is replicated with the Master database in close to real time. WorkflowGen will forward the read-only SQL queries to the Slave database, and because there are more “read” queries than “write” commands, product performance is dramatically improved.

Database scaling is supported only with SQL Server databases.

## Unlimited scalability

For heavy usage with thousands of transactions per hour, you can combine the previous features to build a highly scalable BPM architecture; for example:

- Two load-balanced web servers
- One master database server
- Two slave database servers

# Examples of usage metrics

Some clients have implemented WorkflowGen for enterprise-wide usage on a national or global scale. Here are four examples of usage provided by some of them.

## Example 1

- Type of processes: Key enterprise financial processes, IT processes
- Average number of requests per year: 105,000
- Number of active users: 180,000
- Number of live processes: 22
- Third-party integration: Oracle 11i eBusiness Suite
- Web servers: 3 Windows 2008 R2 Standard Edition 64-bit servers 8X32
- Database: 70 GB
  - SQL Server 2008 Cluster, Windows 2008 R2 Enterprise Edition 64-bit 8X32
  - Active/Active, read-only function, through SQL replication
  - Network F5 load balancer
- File storage: NetApp v6000 Series, 1 TB NetApp disk, RAID 5

## Example 2

- Type of processes: Key enterprise processes
- Average number of requests per year: 90,000
- Average number of actions per year: 360,000
- Number of active users: 1850
- Number of live processes: 300
- Application server: CPU 16 @ 2933 MHz / RAM 32768 MB
- Database server: CPU 16 @ 2933 MHz / RAM 65536 MB
- Database: 15 GB

## Example 3

- Type of processes: Marketing campaigns, equipment management, vehicle reservation
- Average number of requests per year: 30,000
- Number of active users: 96,000

- Number of live processes: 16
- Third-party integration: Symantic Service Desk

#### Example 4

- Type of processes: Human Resources, IT, Corporate Services, Quality, Risk, Core Business
- Average number of requests per year: 82,000
- Number of active users: 4000
- Number of live processes: 23
- Application server: 1 Windows 2008 Server (VM)
- Database: SQL Server 2012 (10 GB)
- File server: 200 GB