

Avolve Software

ProjectDox Server Administration/Monitoring

This document provides information on server monitoring, maintenance and backup recommendations along with other IT related management tasks for the ProjectDox application.

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Server Monitoring

- I. Patch Status
 - a. Patch Servers based upon certified and approved patches by Avolve on a schedule (Avolve does patch management updates on Saturday's).
 - b. Patch information may be found on the Avolve Support website at (access does require an account):
<http://support.avolvesoftware.com/index.php?/Knowledgebase/Article/View/212/0/approved-microsoft-updates-for-projectdox-8515>
 - c. Apache and Java should be excluded from automatic updates. Updates to this software will be provided by Avolve when software is upgraded to ensure compatibility and certification with the application.
- II. Install monitoring agents (Avolve uses N-Central and PRTG Monitor) for the below services:
 - a. Avolve Services:
 - i. Brava!Enterprise Job Processor (Job Processor Server(s))
 - ii. ProjectDox Utility Service (Application Server)
 - iii. ProjectDox WCF Service (Application Server)
 - iv. ProjectDox ProjectCreator Service (Application Server)
 - v. Brava!Enterprise Server (Web Server)
 - b. IIS
 - i. ApplicationPool:
 - ProjectDoxAppPool
 - ii. ProjectDox Website: Monitor the uptime of the site. Avolve monitors allow an input of the URL and credentials to ensure an OK response is received indicating the login process is up and available.
 - c. Disk Space
 - i. Key ProjectDox folders:
 - UserFilesPublish
 - UserFilesSource
 - DLCache
 - WFlowDLLCache
 - PdoxTemp
 - d. Disk I/O
 - e. CPU Usage
 - f. RAM Usage
 - g. Uptime:
 - i. Job Processors have a scheduled task established to reboot the server nightly to clear the OS cache and memory.
 - ii. Reboot after every regular scheduled windows updates.
 - h. Windows Event logs -Setup server notification to troubleshoot any errors that occur within the Event Logs not related to ProjectDox.

- i. Firewall Status -Ensure ProjectDox ports remain open – see Implementation Guide or specific ports for the application noted below.
 - j. UAC settings- Monitor to ensure the UAC remains disabled on the servers.
 - k. Server clock drift-Monitor for no time sync and that the time is off.
- III. Ensure Firewall is set to only allow servers to access other servers on specified ports noted in the Implementation Documentation and seen below for the Orlando configuration.

Portal	Source	Destination	Source Port	Destination Port	Service
TCP	Client	Web Server IIS (external IP)	Any	443	ActiveX Viewer (URL:https://plans.cityoforlando.net)
TCP	Client	Web Server Apache	Any	8443	HTML Viewer (URL:https://plans.cityoforlando.net)
Email	Web Server	Mail Relay Server	Any	Customer Specific	Outgoing email from ProjectDox
TCP/UDP	Web Server	Job Processor 1	Any	Bi-directional 445	UserFilesSource Share
TCP/UDP	Web Server	Job Processor 2	Any	Bi-directional 445	UserFilesPublish Share for IE Viewing
TCP/UDP	Web Server	Application Server	Any	Bi-directional 445	DLCache Share for HTML Viewing (non-IE), WFlowDLLCache
TCP	Application Server	Web Server	Any	443	Project Creator
TCP	Job Processor 1 & 2	Web Server	Any	8080	Allows internal communication
TCP	Web Server	SSRS Report Server	Any	Bi-directional 443	ProjectDox Reporting (must be in the same domain as ProjectDox)
TCP	Web Server	Web Server	Any	10116	License Verification loopback
TCP	Web Server	Web Server	Any	8879	Workflow Service dual workflow only
TCP	Web Server	Web Server	Any	8000	Search Service (ProjectDox WCF Service)
TCP	Web Server	Application Server	Any	1433	MSSQL
TCP	Web Server	Application Server	Any	8001	Middle Tier Security
TCP	Application Server	SQL Server	Any	1433	Middle Tier Security
TCP	Any	GIS Server	Any	80/443	Maps Server (client may specify port)

If your site is load balanced these additional ports are required.

Portal	Source	Destination	Source Port	Destination Port	Service
TCP/UDP	Web Server	San or NAS Network Storage	Any	445	Publishing, Downloading Source, Viewing Files, ProjectFlow (WF)
TCP/UDP	Job Processor Servers 1 & 2	San or NAS Network Storage	Any	445	Publishing

If you site uses Single Sign-On (SSO/LDAP) the below ports are required:

Portal	Source	Destination	Source Port	Destination Port	Service
TCP/UDP	ProjectDox SSO Web Server	LDAP/AD Server	Any	389	Single Sign-On/ LDAP

Reboot Sequence

When rebooting the ProjectDox environment below is server reboot sequence:

1. Database Server
2. Web Server
3. Application Server
4. Job Processor Server(s)

Job Processor Driver Updates

Driver Updates occur as new versions of AutoCad, PDF, etc. are being release providing new features for the publishing engine to accommodate. If you are experiencing issues with publishing files, ensure the latest drivers for the 5 main DLL files are applied. You can check the version via the properties of each file. The 5 main DLL files are located on the Job Processor Servers in the \Program Files (x86)\IGC\Brava!\Brava! Enterprise JobProcessor and are:

1. PDF2DL.dll
2. DWGDL.dll
3. DGNDL.dll
4. DWF2DL.dll
5. EMF2DL.dll

Updated drivers and instructions to apply the drivers are made available from the Avolve Support Portal knowledge base. Contact your Avolve representative for access to the support portal.

■ Data Protection Best Practices

This section provides Avolve Software’s recommended best practices for data protection of ProjectDox sites. Data protection is essential to the success of your organization. Due to variables in customer environments that are outside our control, Avolve Software cannot be responsible for success or failure of customer measures to protect data, including agility related to backup or recovery efforts.

4.1 RAID

Data protection can be enhanced by configuring your servers to use RAID configuration. RAID 1 (mirrored disks), RAID 5, or RAID 10 (0+1). Either configuration can provide redundancy in the event of hardware failure. None of these substitute for regular backups.

4.2 BACKUP

Protect your valuable data by performing regular backups for the below. Avolve recommends a minimum of nightly differential and weekly full backups of your ProjectDox server environment, including a nightly full database backup of the MSSQL server. See the maintenance plan section for recommendation on the database back.

- MSSQL server databases
 - MDF file – Because the MDF file is continuously opened and closed, the operating system will not change the date/time stamp on the file. Ensure the MDF file is being backed up on a daily basis, regardless of time stamp.

- SSRS server

- ProjectDox web server(s)
 - ProjectDox directory
 - \Program Files (x86)\IGC\Brava! Enterprise Server

- NAS/SAN sever
 - Typically holds key share folders for the application including:
 - UserFilesPublish
 - UserFilesSource
 - Export
 - Batchstamps (if applicable)
 - DLCache

- Application server
 - ProjectDox Utility Service
 - ProjectDox Project Creator Service
 - ProjectDox WCF Service
 - Index folder

- Index\db folder
 - Job Processor config files and drivers
 - \Program Files(x86)\IGC
 - \Program Files(x86)\IGC\IGCWriter

The file system backup will take longer to back up than the database. It is Avolve’s recommendation to back up the file system first, and then the database, to ensure they are in sync. Depending on your configuration, some folders may reside in a different location, albeit, they must be backed up and it is the customer responsibility to assure the backups are executed. Contact your Avolve representative to confirm or identify the location/existence of any of these files or folders.

In the case of a catastrophic event, all ProjectDox services and ProjectDox can be reinstalled. The configuration files are the most time consuming to reconfigure so it is significant benefit to back the services installation folders up.

Maintenance Plan

A maintenance plan is a requirement of the ProjectDox application to assist in optimal performance and disaster recovery events. This section will provide best practices recommendations for creating and maintaining a backup plan for ProjectDox to be consider along with the jurisdiction/organizations policies and procedures.

To create or manage maintenance plans, you must be a member of the **sysadmin** fixed server role. Object Explorer only displays the Maintenance Plans node for users who are members of the **sysadmin** fixed server role.

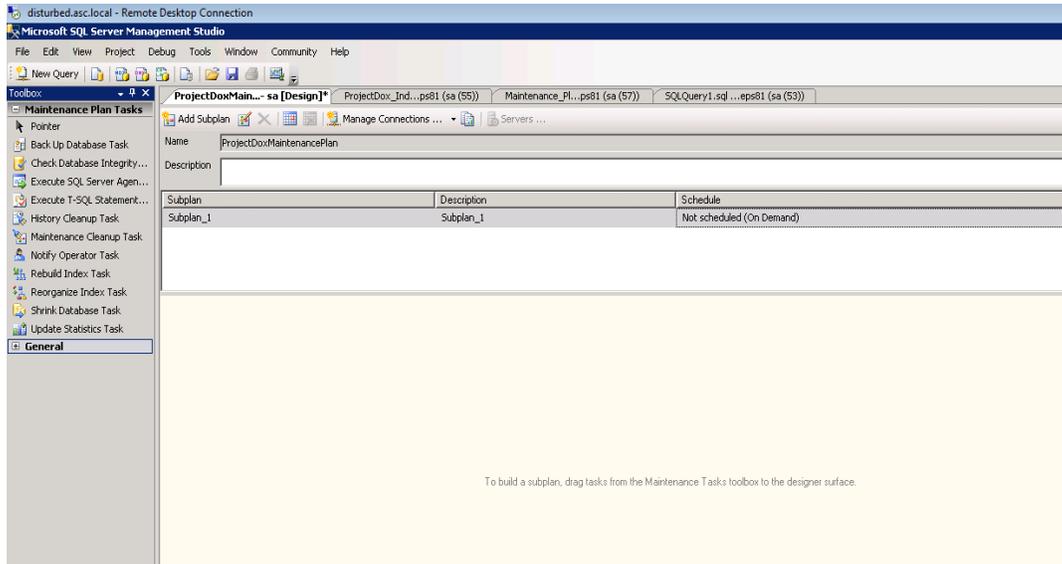
You must be a SQL system administrator to proceed.

5.1 Setup Maintenance Plan

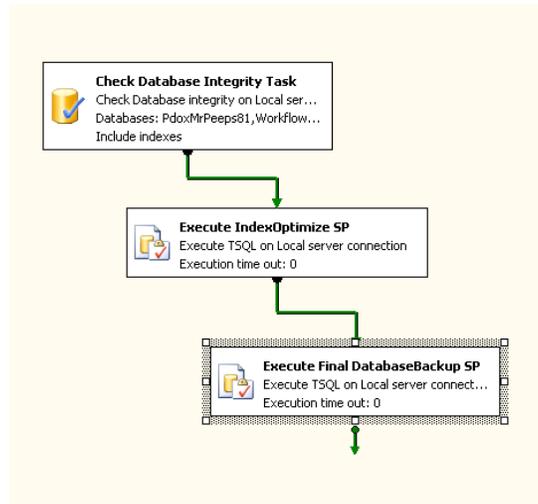
The sequence of the maintenance plan is a preference; the following is a recommended sequence.

- 1) In Object Explorer, click the plus sign to expand the server where you want to create a maintenance plan.
- 2) Click the plus sign to expand the *Management* folder.
- 3) Right-click the *Maintenance Plans* folder and select **New Maintenance Plan**.
- 4) Enter *ProjectDoxMaintenancePlan* into the *Name* text box.

- 5) Open the Toolbox, and expand the *Maintenance Plan Tasks*, then close the Object Browser to take advantage of the design surface.



- 6) Click on **Check Database Integrity** Task and drag it to the design surface.
- 7) Choose Execute T-SQL from the Maintenance Plan Tasks two times and drag to the design surface.
- 8) Click on the title of each T-SQL Statement Task and rename as shown in the screen shot.
 - Check Database Integrity Task – name update not required
 - Execute IndexOptimize SP
 - Execute Final DatabaseBackup SP
- 9) Click on **Check Database Integrity** Task and a green connector will become available.
- 10) Drag the connector to the Execute IndexOptimize SP Task.
- 11) Repeat the action to connect the third Task. Continue until the three tasks are connected.



5.2 Edit the Tasks

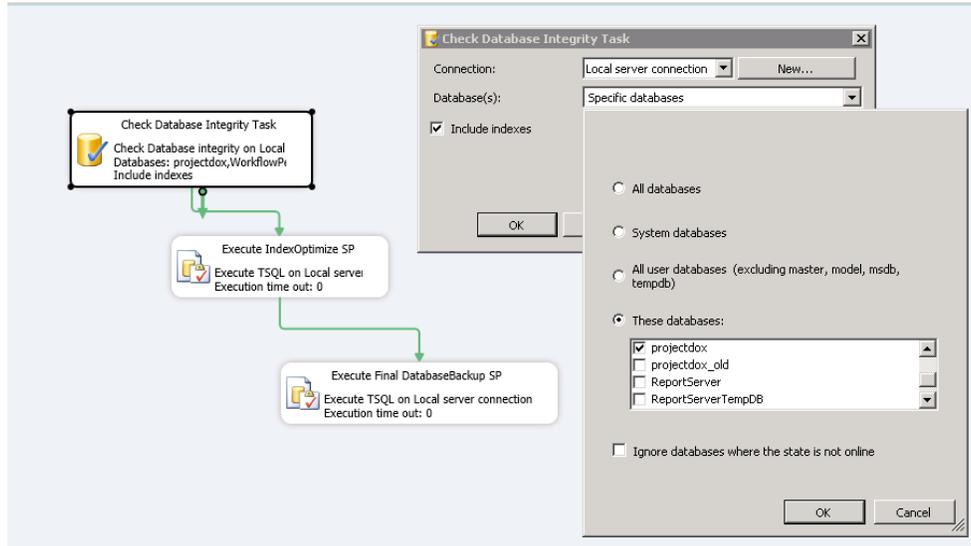


ProjectFlow is contained in ProjectDox and requires no additional database, therefore, any reference in this setup to WorkflowPersistenceStore can be ignored. If your system is dual workflow or strictly ProjectDox Workflow, you must include the WorkflowPersistenceStore database maintenance in your plan.

- 1) Edit the Check Database Integrity Task and select your two databases, ProjectDox and WorkflowPersistenceStore (if dual workflow).
- 2) Right-click to select Edit for each of the T-SQL Tasks.
- 3) Copy and paste the SQL displayed under the two T- SQL Tasks.
- 4) Confirm the names of your ProjectDox and WorkflowPersistenceStore (if dual workflow) database names are correct.
- 5) Confirm the backup folder name and path is correct.
- 6) The Local server connection should remain for each Task.
- 7) If you are backing up a SQL Server Standard Edition, set compress to N (@Compress = 'N',) for both DatabaseBackup SPs. Only SQL Server Enterprise Edition supports Compression.

5.3 Check Database Integrity Task

- 1) Using the Maintenance Plan Task config Window, select two databases:
- 2) ProjectDox and WorkflowPersistenceStore (if dual workflow).
- 3) **Include indexes** check box should be checked.



5.3.1 Execute the IndexOptimize SP

Use ProjectDox

GO

EXECUTE dbo.DatabaseBackup

@Databases = 'ProjectDox,WorkflowPersistenceStore',

@Directory = 'H:\PDOXBACKUP',

@BackupType = 'FULL',

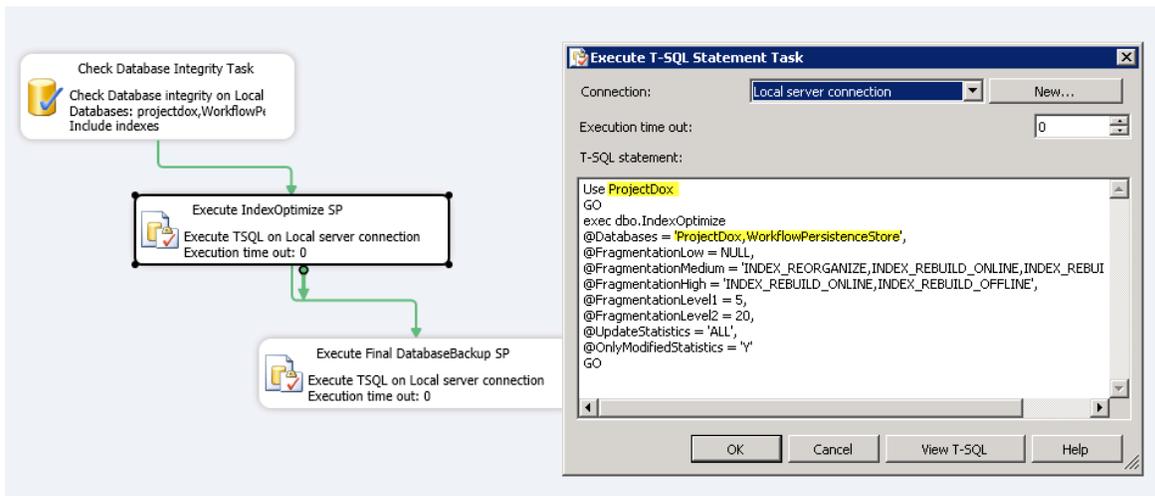
@Verify = 'Y',

@Compress = 'Y',

@CheckSum = 'Y',

@CleanupTime = 24

GO



5.3.2 Execute Final Database Backup SP

Use ProjectDox

GO

EXECUTE dbo.DatabaseBackup

@Databases = 'ProjectDox,WorkflowPersistenceStore',

@Directory = 'H:\PDOXBACKUP',

@BackupType = 'FULL',

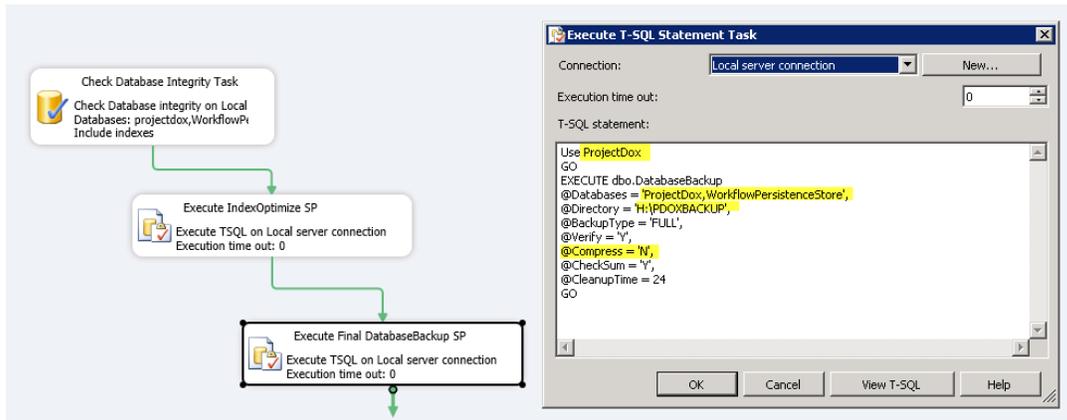
@Verify = 'Y',

@Compress = 'Y',

@Checksum = 'Y',

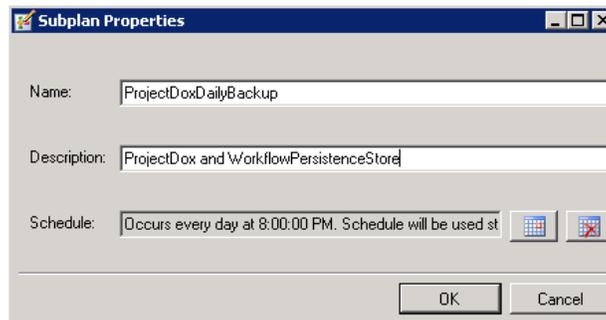
@CleanupTime = 24

GO

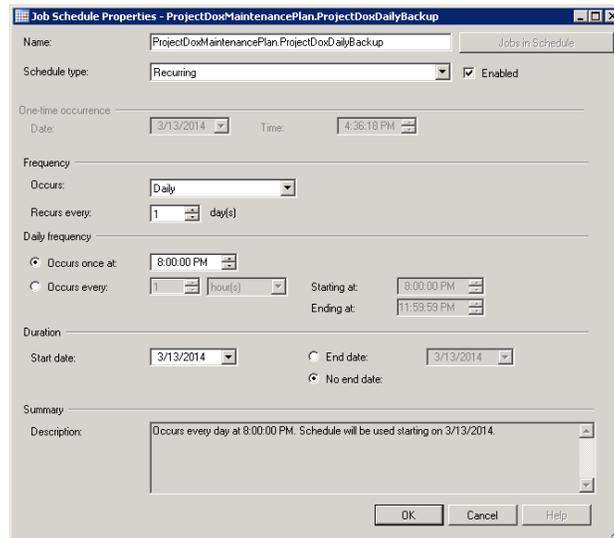


5.4 Schedule Daily

- 1) Return to the ProjectDoxMaintenancePlan and click the Subplan Properties icon.
- 2) Give the Subplan a meaningful Name and Description, then click **OK**.

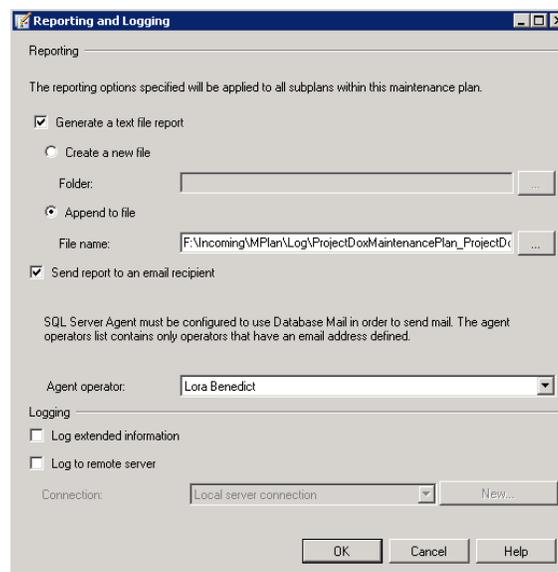


- 3) Click the Subplan Schedule icon and schedule the plan to execute daily at a time that will not interfere with operations.



5.5 Reporting and Logging

- 1) Return to the ProjectDoxMaintenancePlan and click the Reporting and Logging icon.
- 2) Choose how and where you would like to manage the log file.
- 3) It is always preferred to select **Send report to an email recipient** to push the status of the backup.

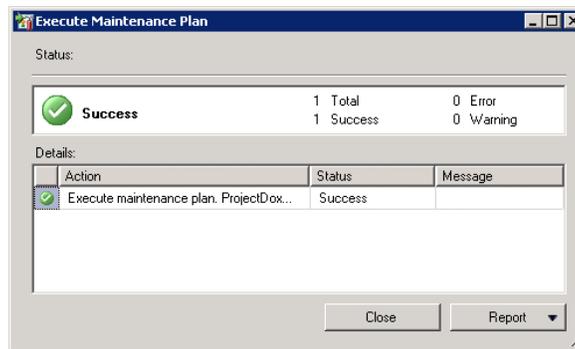


- 4) Expand SQL Server Agent, Jobs and double-click on ProjectDoxMaintenancePlan.

- 5) Choose *Notifications*, check *Email*, select the name of the recipient and the desired condition, and click **OK**.

5.6 Test the Maintenance Plan

- 1) Confirm that the SQL Server Agent is started.
- 2) Right-click on the ProjectDoxMaintenancePlan under Management.
- 3) Choose **Execute** to test the plan and confirm it is configured properly.
- 4) You should receive the following message if successful:



- 5) If you receive notice of an error, select **View History** under the job's Maintenance Plan to view the error, and then correct it. In this the case the backup location is not accessible.

