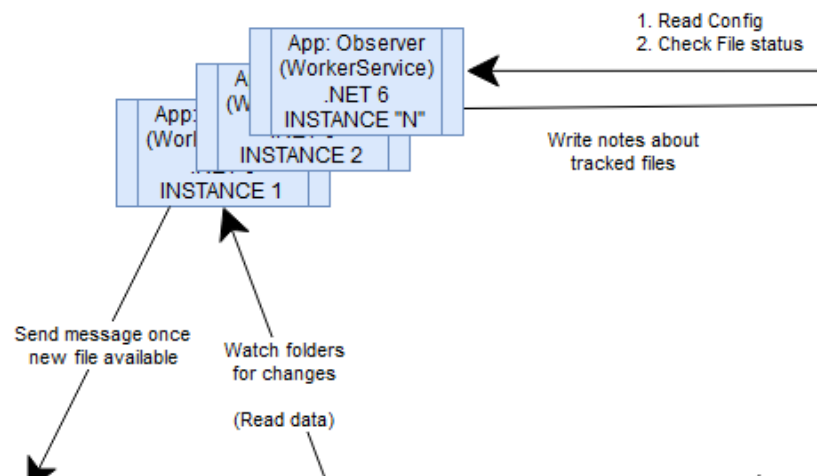


Solution for “NPTS”

Code name “Sim City 2023”

Solution Units

WorkerService_Observer



This programming unit is responsible for:

- 1) Folders observation, according to provided file mask,
- 2) Sending notification to MQ server, once new file with matched criteria has been created

Unit is fully configurable and expandable.

You can run few instance of this unit in order to load balancer.

You can run one app instance to monitor numbers of folders.

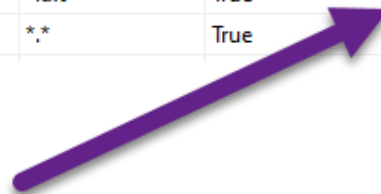
Each app can get assignment to specific scope of folders.

Depending on the data load and appearance frequency each instance of Observer can serve 10, 15 or 25 folders or may be even 50, limit we don't know yet; so by running 5 instance of Observer, theoretically system can handle 100, 200 or 500+ of folders with file data.

How to assign observer app to specific folder

Step 1: make changes in Db table *Config_Folders*

SDK\SQL2019.SimCi...bo.Config_Folders		SDK\SQL2019.SimCi...dbo.TrackLog_Files		Object Explorer Details	
	FolderId	FolderToObserver	FilePattern	FolderIsActive	AssignToObser...
▶	1	E:\My\SDK\XTask6\data_in\s1\	*.txt	True	35
	2	E:\My\SDK\XTask6\data_in\s2\	*.txt	True	35
	3	E:\My\SDK\XTask6\data_in\s3\	*.*	True	35



Step 2: make necessary changes in *appsettings.json*. In this sample instance of App Broker has Id "35" and it mean that this specific instance going to monitor only folders assigned to it in database

```
{
  "Logging": {
    "LogLevel": {
      "Default": "Information",
      "Microsoft.Hosting.Lifetime": "Information"
    }
  },
  // Observer area
  "ScopeOfFolders": 35,
  // Executor area
  "FileMaxAccessWait": 120000,
  "SleepBetweenFileAccessAttempt": 500,
  // Common area. MQ Server. Observer and Broker
  "QueuePath": "SimCity2023",
  "QueueServer": "localhost",
  // Common area. Db. Observer and Executor
  "ConnectionString": "Data Source=SDK\\SQL2019;Initial Catalog=SimCity;Integrated Security=true;TrustServerCertificate=True;"
}
```

Observer behavior

Once new file appear in observed folder, app check, does this file (with the same file name and path) already has been registered in the system. If file with the absolutely the same file name and path already is in system, it will be ignored for future processing.

Information about tracked files stored in Db table *TrackLog_Files*.

SDK\SQL2019.SimCi...bo.Config_Folders		SDK\SQL2019.SimCi...dbo.TrackLog_Files		Object Explorer Details		
TrackFileId	FileFullPath	FileStartProcee...	FileFinishProc...	EntriesInFilesOK	EntriesInFilesF...	
81	E:\My\SDK\XTask6\data_in\s3\file1.txt	NULL	NULL	0	0	
82	E:\My\SDK\XTask6\data_in\s1\file1.txt	NULL	NULL	0	0	
83	E:\My\SDK\XTask6\data_in\s2\file1.txt	NULL	NULL	0	0	
84	E:\My\SDK\XTask6\data_in\s3\file1a.txt	NULL	NULL	0	0	
85	E:\My\SDK\XTask6\data_in\s3\file2.txt	NULL	NULL	0	0	
86	E:\My\SDK\XTask6\data_in\s1\file1a.txt	NULL	NULL	0	0	
87	E:\My\SDK\XTask6\data_in\s2\file1a.txt	NULL	NULL	0	0	
88	E:\My\SDK\XTask6\data_in\s1\file2.txt	NULL	NULL	0	0	
89	E:\My\SDK\XTask6\data_in\s2\file2.txt	NULL	NULL	0	0	

Demo

```

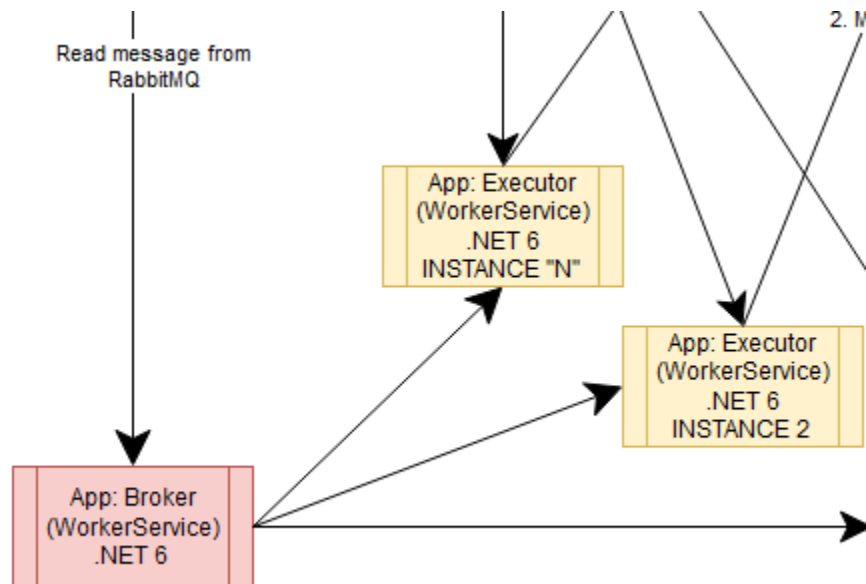
WorkerService_Observer.exe - Shortcut
info: WorkerService_Observer.WorkerObserver[0]
      watcher is initializing
info: WorkerService_Observer.WorkerObserver[0]
      Watcher for folder "E:\My\SDK\XTask6\data_in\s1\" created. File mask: "*.txt"
info: WorkerService_Observer.WorkerObserver[0]
      Watcher for folder "E:\My\SDK\XTask6\data_in\s2\" created. File mask: "*.txt"
info: WorkerService_Observer.WorkerObserver[0]
      Watcher for folder "E:\My\SDK\XTask6\data_in\s3\" created. File mask: "*.*"
info: WorkerService_Observer.WorkerObserver[0]
      Watcher is started for 3 folder(s)!
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s1\file1.txt" at 11/11/2023 9:35:48 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s2\file1.txt" at 11/11/2023 9:35:48 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s3\file1.txt" at 11/11/2023 9:35:48 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s3\file1a.txt" at 11/11/2023 9:35:49 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s3\file2.txt" at 11/11/2023 9:35:49 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s1\file1a.txt" at 11/11/2023 9:35:49 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s2\file1a.txt" at 11/11/2023 9:35:49 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s2\file2.txt" at 11/11/2023 9:35:49 AM
info: WorkerService_Observer.WorkerObserver[0]
      New incoming file "E:\My\SDK\XTask6\data_in\s1\file2.txt" at 11/11/2023 9:35:49 AM

```

Watcher is
Up and
Running

New
files

WorkerService_Broker



This application unit is responsible for:

Receiving and processing messages from MQ server

Once new message received, app update file status in database and changed to next one; after that Broker run Executor app in new thread by using principle – one file – one Executor to run.

Additional configuration

Make sure that *QueuePath* and *QueueServer* inside *appsettings.json* has proper value before running app.

// Observer app area

- Each entry with folder could be assigned to specific Observer. Use it for
`"ScopeOfFolders": 35,`
`"EventRecycler": 15,`

- File could be locked for read. We are going to wait 120 seconds before failure. If needed could be increased till 5 minutes.

// Executor app area

- While we are waiting we recheck our access each 1.5 second. Could be changed to 3, 5 or 15.
`"SleepBetweenFileAccessAttempt": 1500,`

// Common area. MQ Server. Using by Observer and Broker apps

`"QueuePath": "SimCity2023",`

```
"QueueServer": "localhost",  
  
// Common area. Db. Observer and Executor apps  
"ConnectionString": "Data Source=SDK\\SQL2019;Initial Catalog=SimCity;Integrated  
Security=true;TrustServerCertificate=True;"
```