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Package Manager

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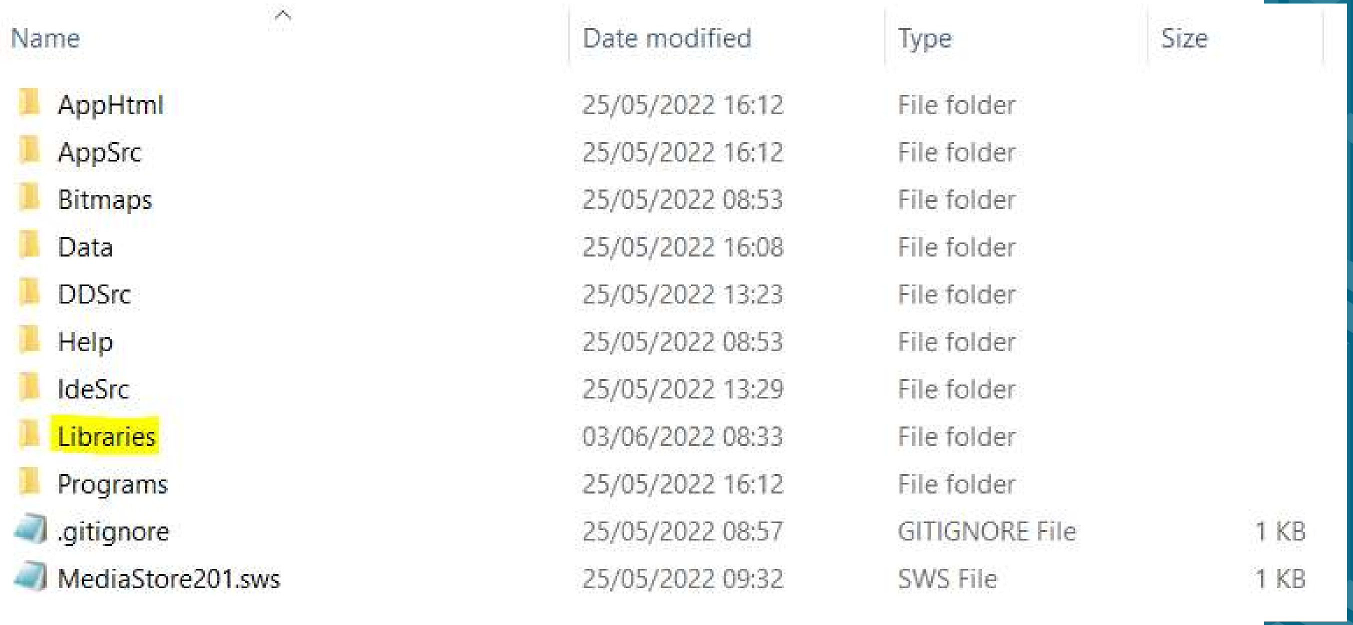
What does our library landscape look like?

- You download them from whoever’s developers website.
  - DataAccess.com/*
  - vdf-guidance.com
  - Github.com or others…
  - Forum links…
  - Even email!..
  - And, many more...

Where do I leave them?

- A Libraries directory
  - Local
  - Global
  - Git submodule



Name	Date modified	Type	Size
AppHtml	25/05/2022 16:12	File folder	
AppSrc	25/05/2022 16:12	File folder	
Bitmaps	25/05/2022 08:53	File folder	
Data	25/05/2022 16:08	File folder	
DDSrc	25/05/2022 13:23	File folder	
Help	25/05/2022 08:53	File folder	
IdeSrc	25/05/2022 13:29	File folder	
Libraries	03/06/2022 08:33	File folder	
Programs	25/05/2022 16:12	File folder	
.gitignore	25/05/2022 08:57	GITIGNORE File	1 KB
MediaStore201.sws	25/05/2022 09:32	SWS File	1 KB

What is the problem with this?

- Hard to manage your projects
  - Keep them updated, which doesn’t happen in most cases
  - Where can I even find that update though?
  - When will I ever get a notification on this unless I look?

Going even further

- Should you even update, won’t it break my whole product?
  - You don’t have tests to verify the dependency on the library
  - The library does not have any tests to verify it’s functionality in the first place

- So, always the “trust but verify” applies... and that’s what’s makes it hard.

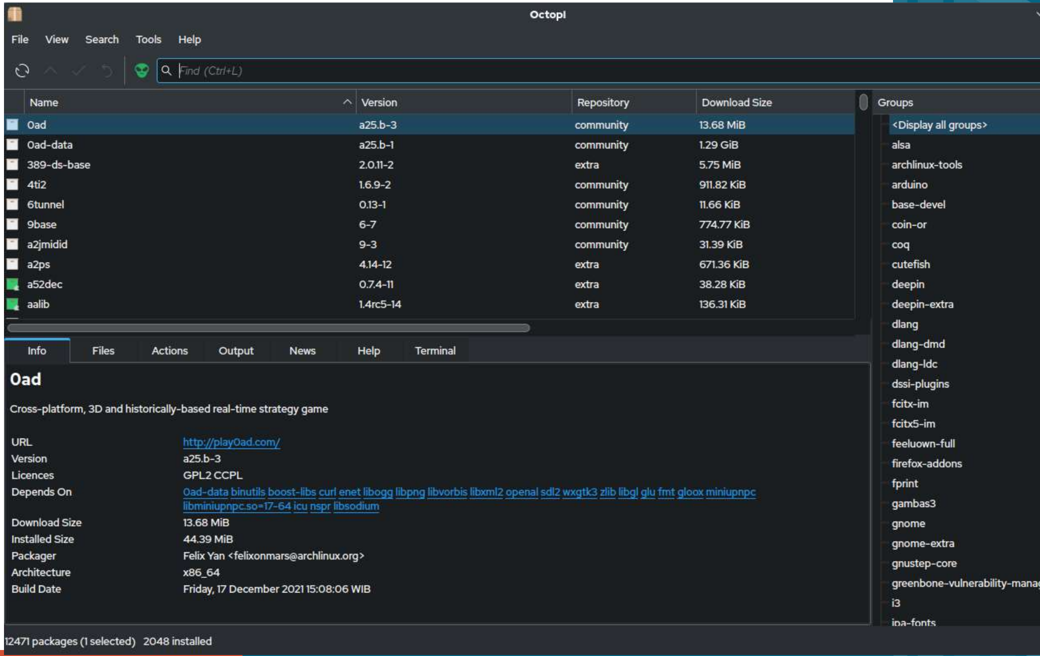
How is this solved?

- By slowly creating a new library-based ecosystem, by developers, for developers!
- A tool that will help you;
    - Manage your workspaces;
    - Manage your libraries, and update them if you want to;
    - Provide a central place for (OSS) library distribution

What does the sector look like?

- Npm (JavaScript, TypeScript)
- Cargo (Rust)

- Chocolatery, winget (Windows)
- Homebrew (Linux, MacOS)
- All the –nix stuff!



Name	Version	Repository	Download Size
0ad	a25.b-3	community	13.68 MiB
0ad-data	a25.b-1	community	1.29 GiB
389-ds-base	2.0.11-2	extra	5.75 MiB
4ti2	1.6.9-2	community	911.82 KiB
6tunnel	0.13-1	community	11.66 KiB
9base	6-7	community	774.77 KiB
a2jmidid	9-3	community	31.39 KiB
a2ps	4.14-12	extra	671.36 KiB
a52dec	0.7.4-11	extra	38.28 KiB
aalib	1.4rc5-14	extra	136.31 KiB

Groups
<Display all groups>
alsa
archlinux-tools
arduino
base-devel
coin-or
coq
cutefish
deepin
deepin-extra
dlang
dlang-dmd
dlang-ldc
dssi-plugins
fcitx-im
fcitx5-im
feeluown-full
firefox-addons
fprint
gambas3
gnome
gnome-extra
gnustep-core
greenbone-vulnerability-mana
i3
ipa-fonts

0ad

Cross-platform, 3D and historically-based real-time strategy game

URL	http://play0ad.com/
Version	a25.b-3
Licences	GPL2 CCPL
Depends On	0ad-data binutils boost-libs curl enet libogg libpng libvorbis libxml2 openal sdl2 wxgtk3 zlib libgl glu fmt gloox miniupnpc libminiupnpc.so=17-64 icu nspr libsodium
Download Size	13.68 MiB
Installed Size	44.39 MiB
Packager	Felix Yan <felixonmars@archlinux.org>
Architecture	x86_64
Build Date	Friday, 17 December 2021 15:08:06 WIB

12471 packages (1 selected) 2048 installed

Goals

- Collect as many Dataflex packages in one place, enabling far easier distribution to end-users.
- Allow end-users to download said packages in an easy and user-friendly way.
- Allow packages to be automatically updated if required, without overwriting files the user may have changed themselves.

This is what the package manager will do!

- It can install/remove libraries;
  - From a global or local location on your own hard drive;
  - From that central storage location that is somewhere in the cloud;
    - By name e.g. DA/QuillEditor:1.0, DA/DFReports:latest
    - Where you guys should be able to post your libraries for years to come
  - From a version control system like any git-based service provider like GitHub

What are our priorities?

- First priority:
  - Web Controls
  - DLLs
- For later:
  - COM components
  - Tables/Migration & Templates

Docker-like notation

- {Repository}/{Package}{:version}

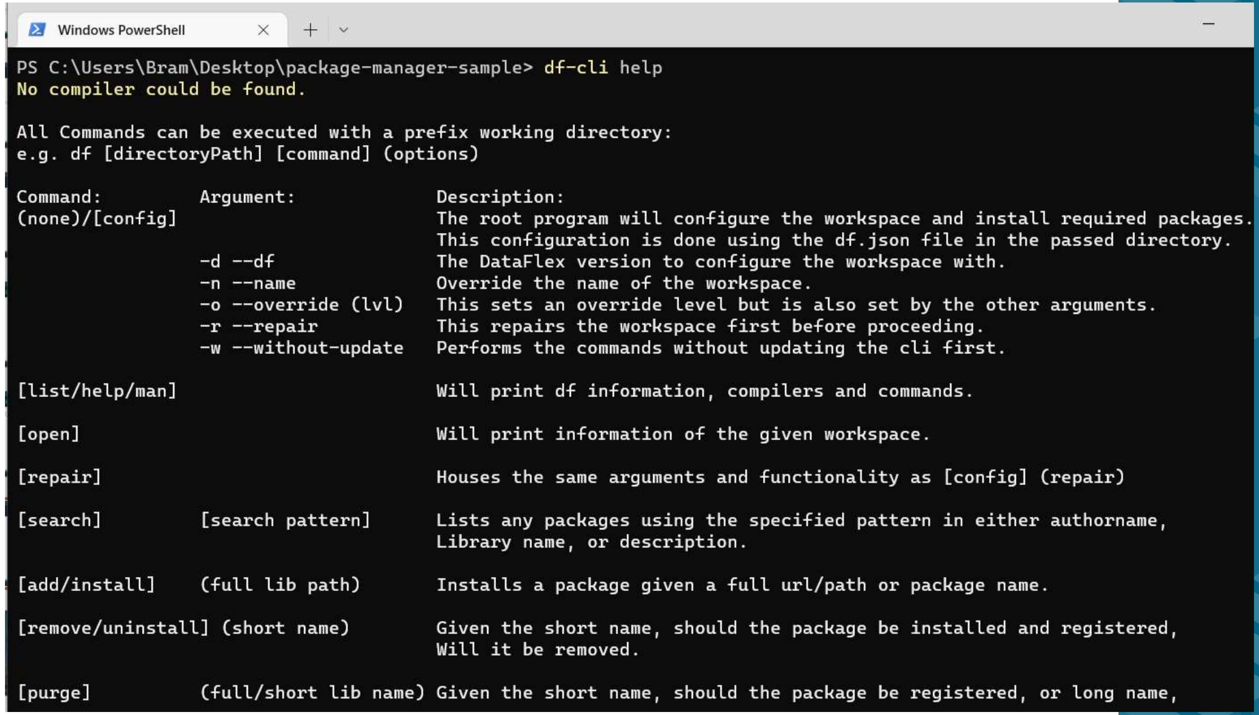
- Easy to use
- Both personal and public
  - Shared access like for organizations
- Version layering
  - Latest
- Promoted/Verified without repository

Security

- We automatically scan for viruses and malware!
  - Happens every on every push.
- Verified publishers

That’s how df-cli (Concept) was born!

- Console only
- With a UI in the works
  - Integrated in the Studio
  - DAID



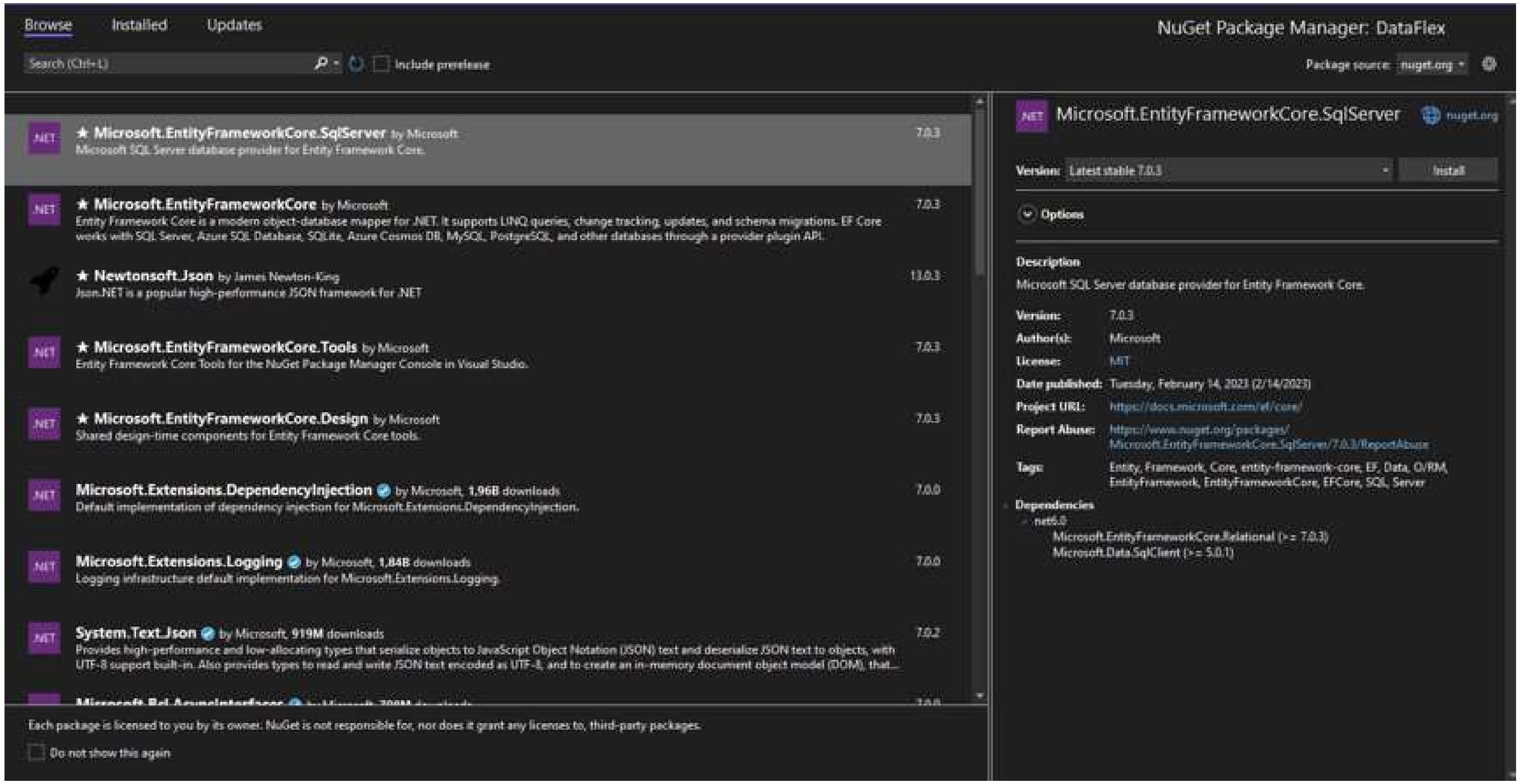
Windows PowerShell

```
PS C:\Users\Bram\Desktop\package-manager-sample> df-cli help
No compiler could be found.

All Commands can be executed with a prefix working directory:
e.g. df [directoryPath] [command] (options)

Command:           Argument:              Description:
(none)/[config]                           The root program will configure the workspace and install required packages.
                                          This configuration is done using the df.json file in the passed directory.
                   -d --df                The DataFlex version to configure the workspace with.
                   -n --name              Override the name of the workspace.
                   -o --override (lvl)    This sets an override level but is also set by the other arguments.
                   -r --repair            This repairs the workspace first before proceeding.
                   -w --without-update    Performs the commands without updating the cli first.

[list/help/man]                           Will print df information, compilers and commands.

[open]                                    Will print information of the given workspace.

[repair]                                  Houses the same arguments and functionality as [config] (repair)

[search]           [search pattern]       Lists any packages using the specified pattern in either authorname,
                                          Library name, or description.

[add/install]      (full lib path)        Installs a package given a full url/path or package name.

[remove/uninstall] (short name)           Given the short name, should the package be installed and registered,
                                          Will it be removed.

[purge]            (full/short lib name)  Given the short name, should the package be registered, or long name,
```

This is what the df-cli will do!

- It can generate all your workspace related files like .sws’, .ws’, .webconfigs, index.html’s.
  - To accommodate for JavaScript requiring libraries.
  - Will stay backwards compatible with your workspace files!
- And very important make sure (by checksum) that you didn’t change library behaviour, which you would otherwise depend on later
  - And off course also for a sense of safety and stability

It might resemble something like NuGet



★ **Microsoft.EntityFrameworkCore.SqlServer** by Microsoft — 7.0.3
Microsoft SQL Server database provider for Entity Framework Core.

★ **Microsoft.EntityFrameworkCore** by Microsoft — 7.0.3
Entity Framework Core is a modern object-database mapper for .NET. It supports LINQ queries, change tracking, updates, and schema migrations. EF Core works with SQL Server, Azure SQL Database, SQLite, Azure Cosmos DB, MySQL, PostgreSQL, and other databases through a provider plugin API.

★ **Newtonsoft.Json** by James Newton-King — 13.0.3
Json.NET is a popular high-performance JSON framework for .NET

★ **Microsoft.EntityFrameworkCore.Tools** by Microsoft — 7.0.3
Entity Framework Core Tools for the NuGet Package Manager Console in Visual Studio.

★ **Microsoft.EntityFrameworkCore.Design** by Microsoft — 7.0.3
Shared design-time components for Entity Framework Core tools.

Microsoft.Extensions.DependencyInjection by Microsoft, **1,96B** downloads — 7.0.0
Default implementation of dependency injection for Microsoft.Extensions.DependencyInjection.

Microsoft.Extensions.Logging by Microsoft, **1,84B** downloads — 7.0.0
Logging infrastructure default implementation for Microsoft.Extensions.Logging.

System.Text.Json by Microsoft, **919M** downloads — 7.0.2
Provides high-performance and low-allocating types that serialize objects to JavaScript Object Notation (JSON) text and deserialize JSON text to objects, with UTF-8 support built-in. Also provides types to read and write JSON text encoded as UTF-8, and to create an in-memory document object model (DOM), that...

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Do not show this again

Microsoft.EntityFrameworkCore.SqlServer — nuget.org

Version: Latest stable 7.0.3

Description
Microsoft SQL Server database provider for Entity Framework Core.

Version:	7.0.3
Author(s):	Microsoft
License:	MIT
Date published:	Tuesday, February 14, 2023 (2/14/2023)
Project URL:	https://docs.microsoft.com/ef/core/
Report Abuse:	https://www.nuget.org/packages/Microsoft.EntityFrameworkCore.SqlServer/7.0.3/ReportAbuse
Tags:	Entity, Framework, Core, entity-framework-core, EF, Data, O/RM, EntityFramework, EntityFrameworkCore, EFCore, SQL, Server

Dependencies
- net6.0
  - Microsoft.EntityFrameworkCore.Relational (>= 7.0.3)
  - Microsoft.Data.SqlClient (>= 5.0.1)

Underneath

- How does it configure my workspace information?
  - Using a new df.json file (might change)
  - Which abstract all information of your project to one file
- You can change your workspace information in that file
  - Or, by interacting with it using df-cli or the incoming UI-version

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Demo Time!

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Thank you!

Are there any questions?