



12° Encontro de Programadores C & C++ do Brasil

Troubleshooting em Equipes Remotas com Debugging Tools for Windows

por Wanderley Caloni

Sócio-Desenvolvedor da Intelitrader

Sócio-Desenvolvedor da BitForge

~~Troubleshooting em Equipes~~ ~~Remotas~~ Acesso ao código-fonte através de Source Server e Symbol Server com Debugging Tools for Windows

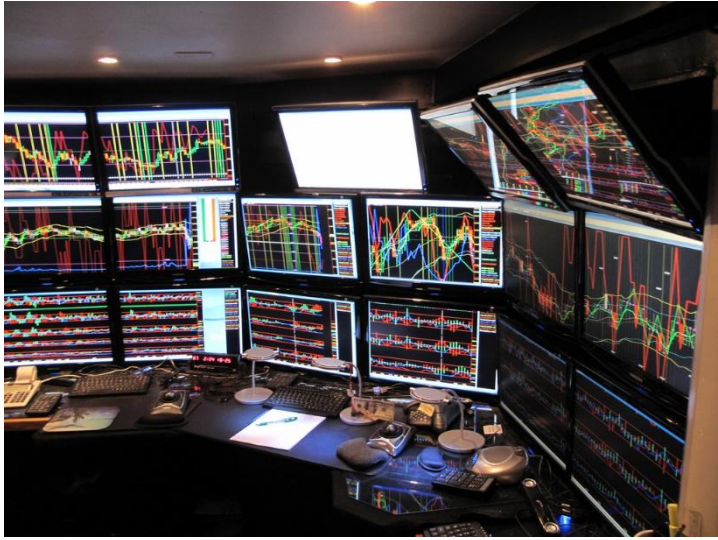
por Wanderley Caloni

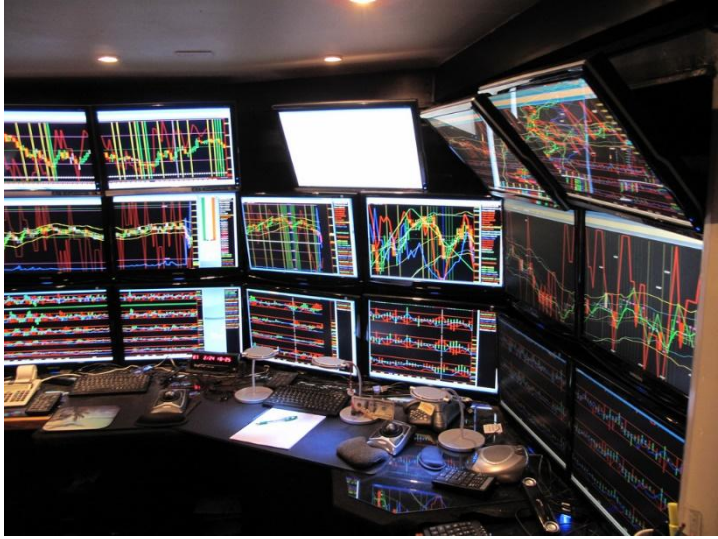
Sócio-Desenvolvedor da Intelitrader

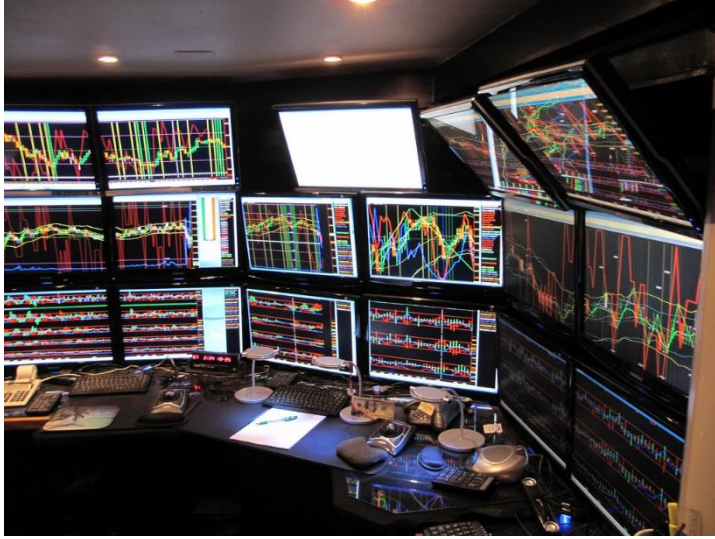
Sócio-Desenvolvedor da BitForge

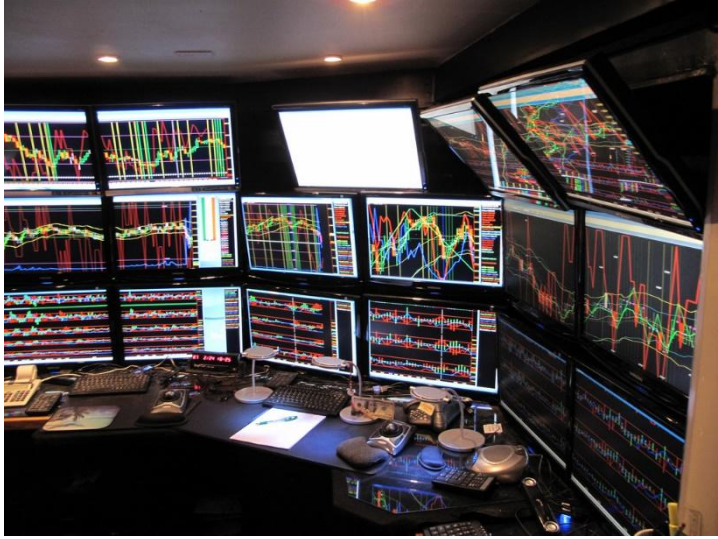


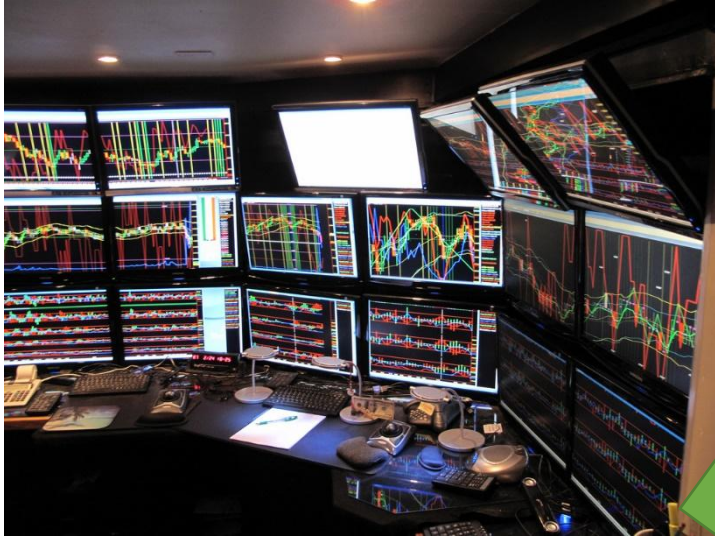
Quem quer dinheiro?

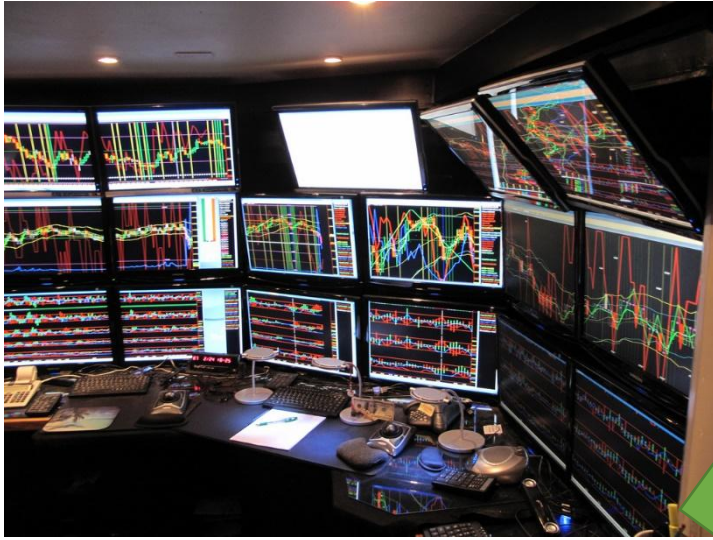












INTELLITRADER



Uma startup de startups



Especialista em consultoria especializada


```
int LongestCommonSubsequenceLength( const std::string &first,
                                     const std::string &second ) {
    const std::string &longer = first.size() > second.size() ? first : second;
    const std::string &shorter = first.size() > second.size() ? second : first;

    int longer_len = longer.size();
    int shorter_len = shorter.size();

    std::vector<int> previous( shorter_len + 1, 0 );
    std::vector<int> current( shorter_len + 1, 0 );

    int
    int
    insert
    first_char_same_in_query_and_text_ ++j ) {
    query_is_candidate_prefix_ toupper( shorter[ j ] ) )
    GetValueElseInsert
    j ] + 1;
    FindWithDefault
    current[ j + 1 ] = std::max( current[ j ], previous[ j + 1 ] );
    }

    for ( int j = 0; j < shorter_len; ++j ) {
        previous[ j + 1 ] = current[ j + 1 ];
    }
}

return current[ shorter_len ];
```

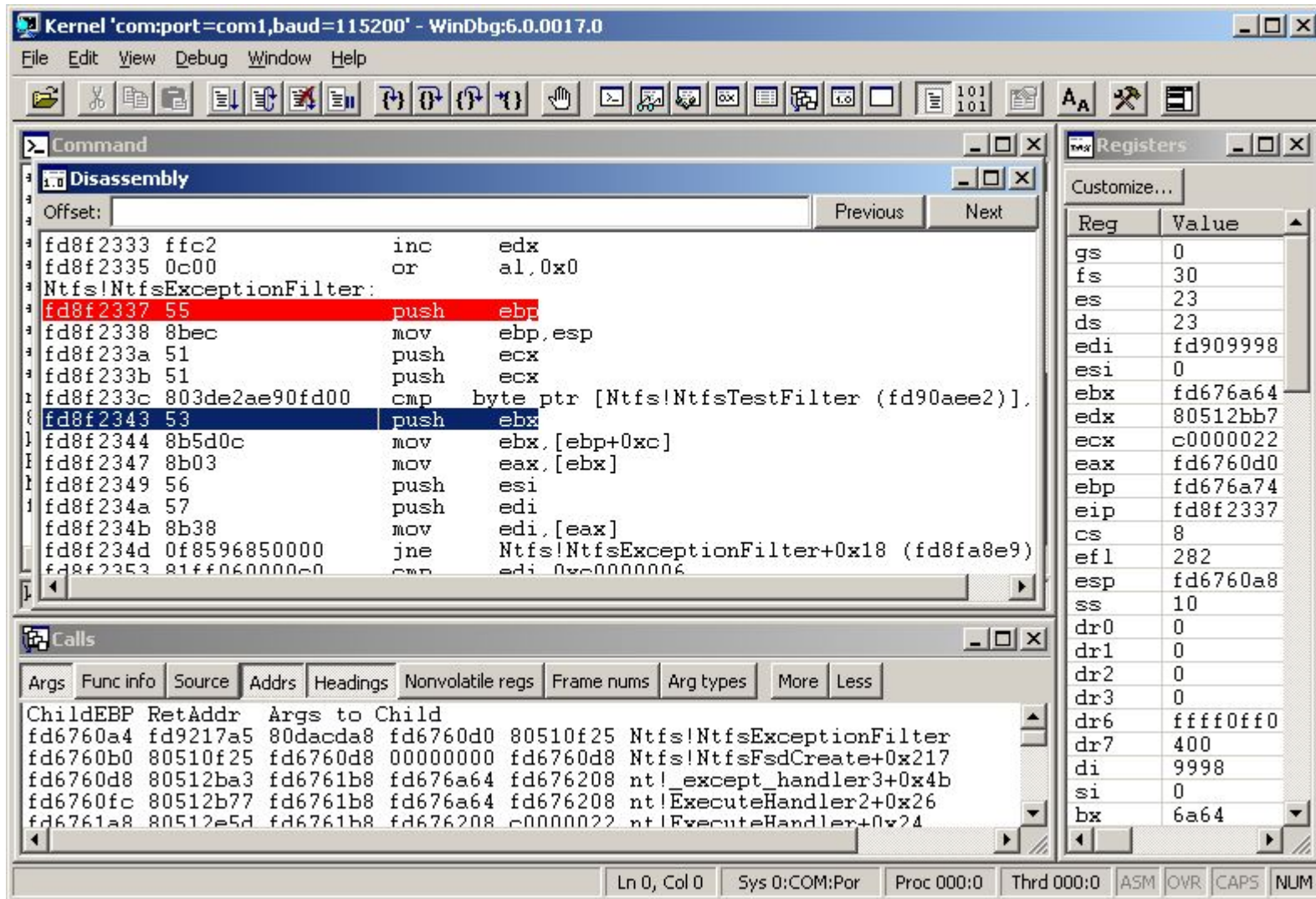
Especialistas C/C++, forjando bits com suor e lágrimas!

Desde 2010 realizamos projetos em diversas áreas. De frameworks para aplicativos móveis e sistemas de IPTV até engenharia de sistemas críticos em fábricas, operadoras de Telecom (MVNO) e [corretoras de valores](#).

Temos as ferramentas e a experiência para a criação de soluções eficazes para problemas que parecem insolúveis.

Contamos com know-how completo em sistemas operacionais Linux e MS Windows, e nas linguagens C/C++/C#, Python e Java.

Vamos ao que interessa?





HOST
Running free build and
kernel debugger

null-modem cable



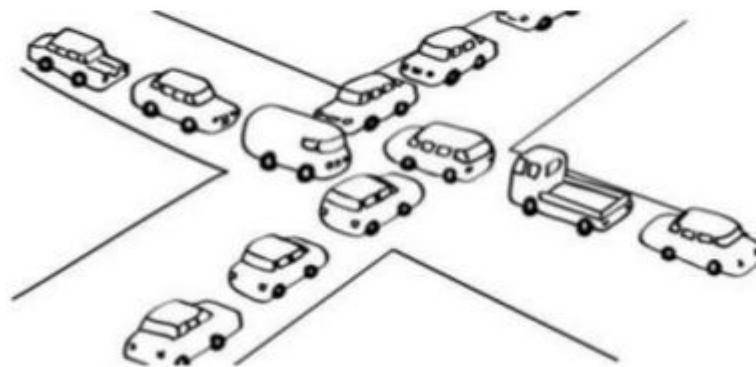
TARGET
Running checked build



dd ed kv kvn . ~ .frame lm a .dvalloc
.dvfree .symfix .reload !analyze -v r
!uniqstack bp bl bm bc bd s !heap dv bm
dd poi(esp+8) !db !eb .sympath .srcpath
.kvn .frame .cls .echo u -remote
-remote -server .help symstore adplus
logger logviewer !sym noisy .call wt !heap
|+* -flt s 1034 -p -a \$\$> <:-o



Depurando até o fim do mundo: técnicas e truques de WinDbg



Symbol Server



SYMBOLS OF THE ALCHEMISTS AND THEIR SIGNIFICATIONS.

Fire.	Air.	Water.	Water.	Earth.		
Lead.	Tin.	Iron.	Gold.	Copper.	Mercury.	Silver.
Antimony.	Arsenic.	Aqua Vitæ.	Borax.	To Purify.		
Cinnabar.	Caput Mortuum.	An Oil.	Saltpeter.	Magnet.		

Source Server



Developer Tools - chrome://newtab/

Elements Network Sources Timeline Console

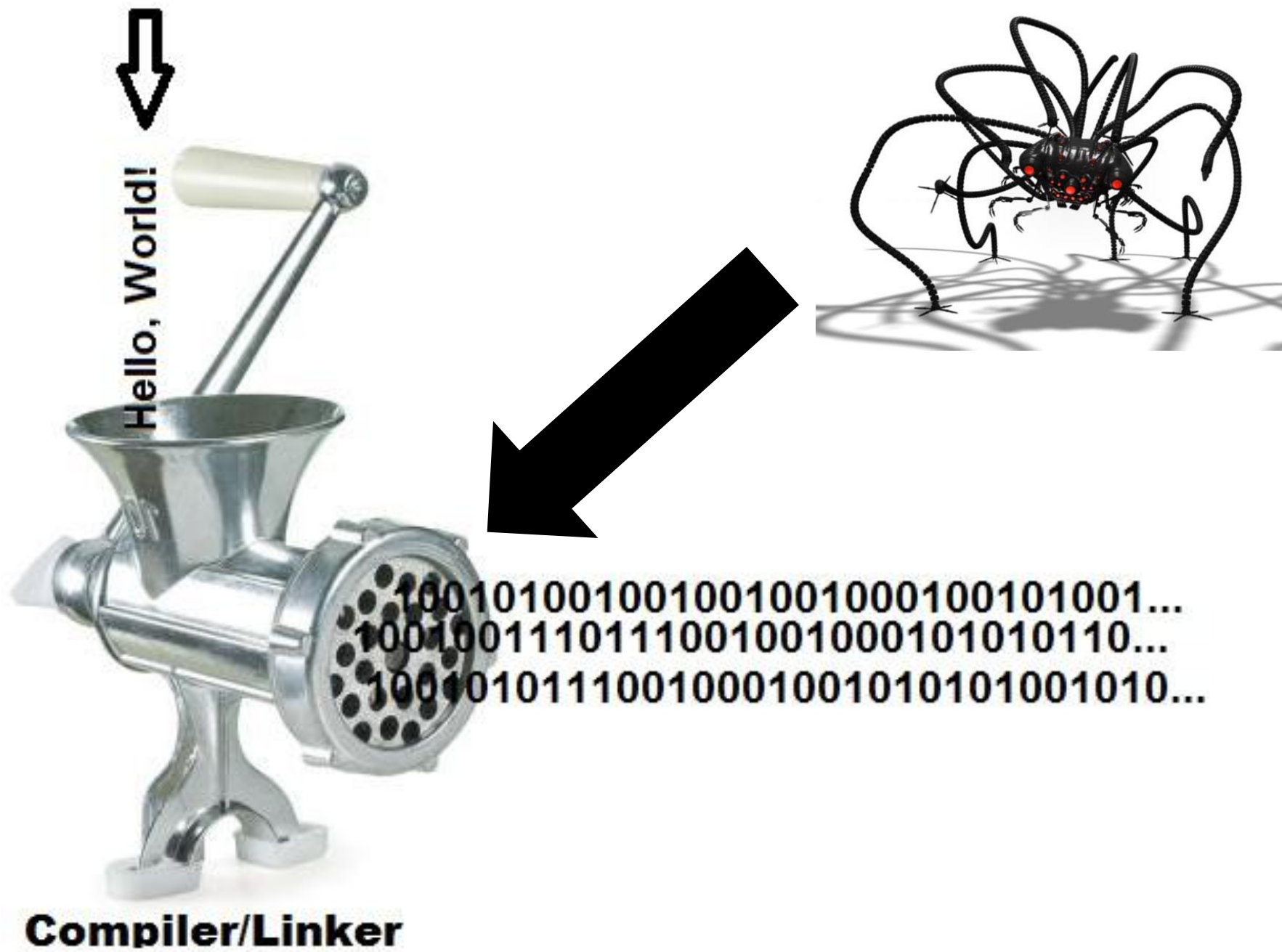
<top frame> Preserve log

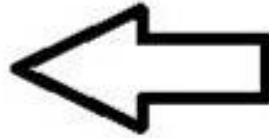
```
> // Não vamos colocar meta.  
var meta = undefined;  
  
// Vamos deixar a meta aberta  
meta = Infinity;  
  
try{  
  +function trabalhar(resultadoAlcancado){  
    // mas, quando atingirmos a meta, vamos dobrar a meta.  
    if(resultadoAlcancado >= meta) {  
      meta = meta*2;  
  
      console.log("A meta foi atingida");  
      return trabalhar(0);  
    }  
  
    ++resultadoAlcancado;  
  
    return trabalhar(resultadoAlcancado);  
  }(0);  
} catch(presidentaSapiensException){  
  console.error("Deu merda");  
}
```

Deu merda VM48

undefined

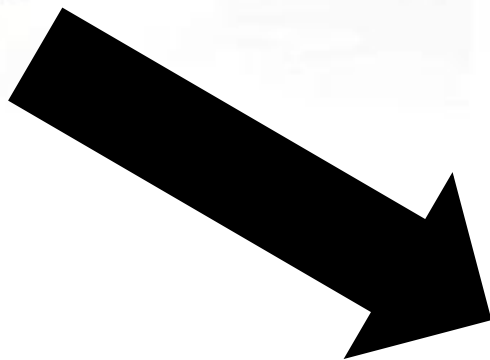
> |



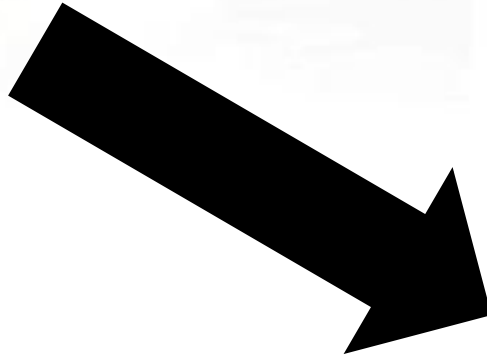


```
#include <iostream>

int main()
{
    std::cout << "Hello world!" << std::endl;
    return 0;
}
```



`symstore.exe add /f Symbols.pdb /s <SymbolStore> /t "ProductName"`



sourcestore.exe?



para baixá-lo, passando a exibi-lo imediatamente na tela do WinDbg. E nada de criar um **repositório no GitHub** para compartilhá-lo, certo?

Modo de Usar

O funcionamento é muito simples, mas pede muitos parâmetros (recomendo criar um script para isso). Então vejamos:

```
Administrator: C:\Windows\system32\cmd.exe

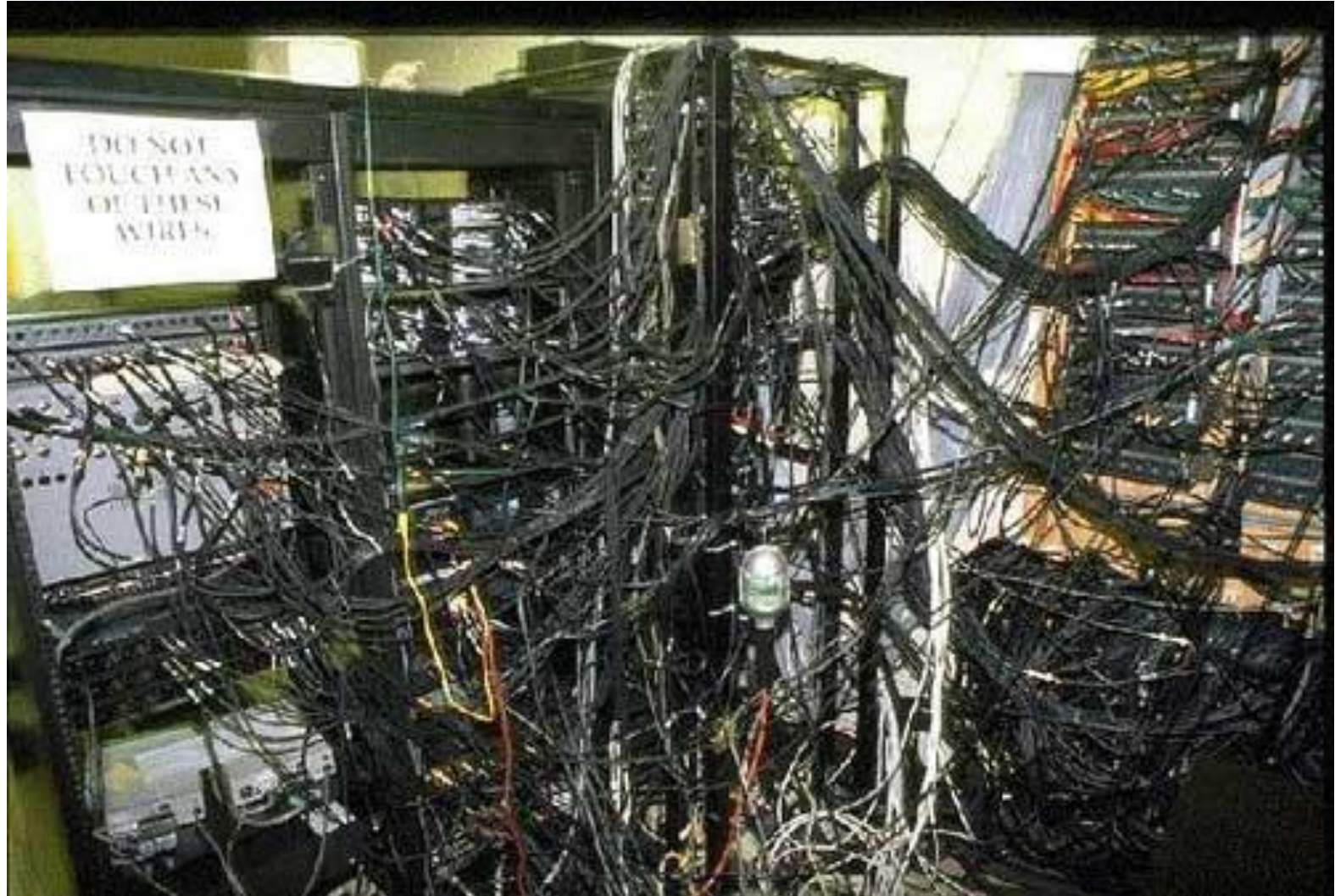
C:\Users\Wanderley\Projects\GitIndex>gitindex.py --help
usage: gitindex.py [-h] --dbgtools DBGTOOLS --pdbpath PDBPATH --projname
                  PROJNAME --repo REPO

GitHub Index: source index PDBs to use with WinDbg/Curl v. Tosca

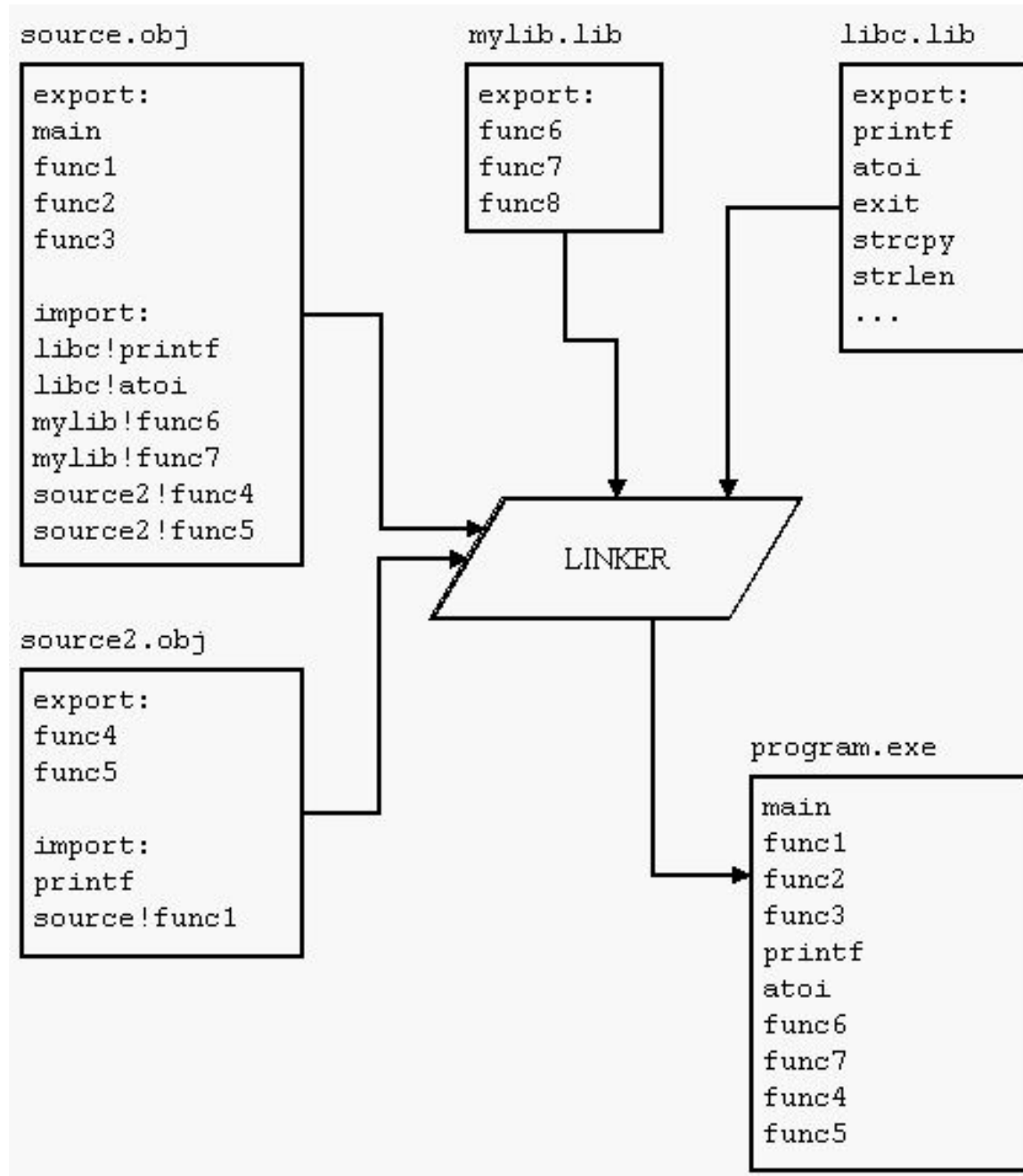
optional arguments:
  -h, --help                show this help message and exit
  --dbgtools DBGTOOLS       directory where are Debugging Tools installed
  --pdbpath PDBPATH         directory where are PDBs
  --projname PROJNAME       GitHub projname (e.g. UserName/ProjName)
  --repo REPO               directory where is the local repo

C:\Users\Wanderley\Projects\GitIndex>_
```

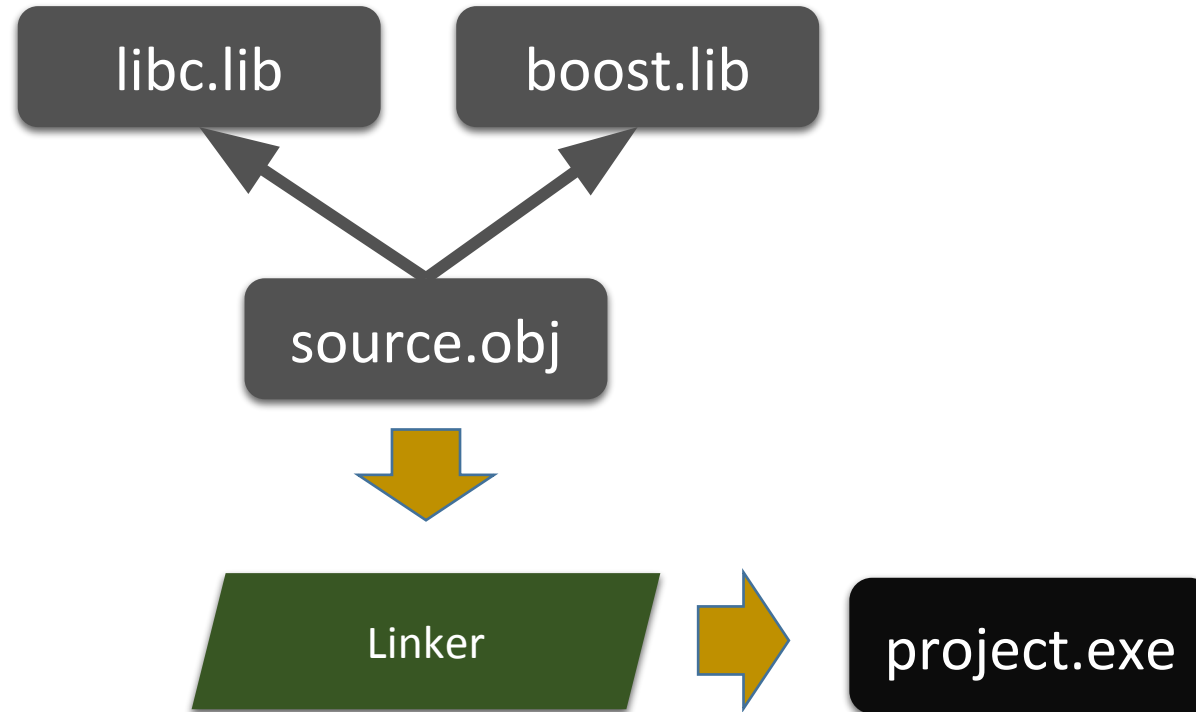

Linker



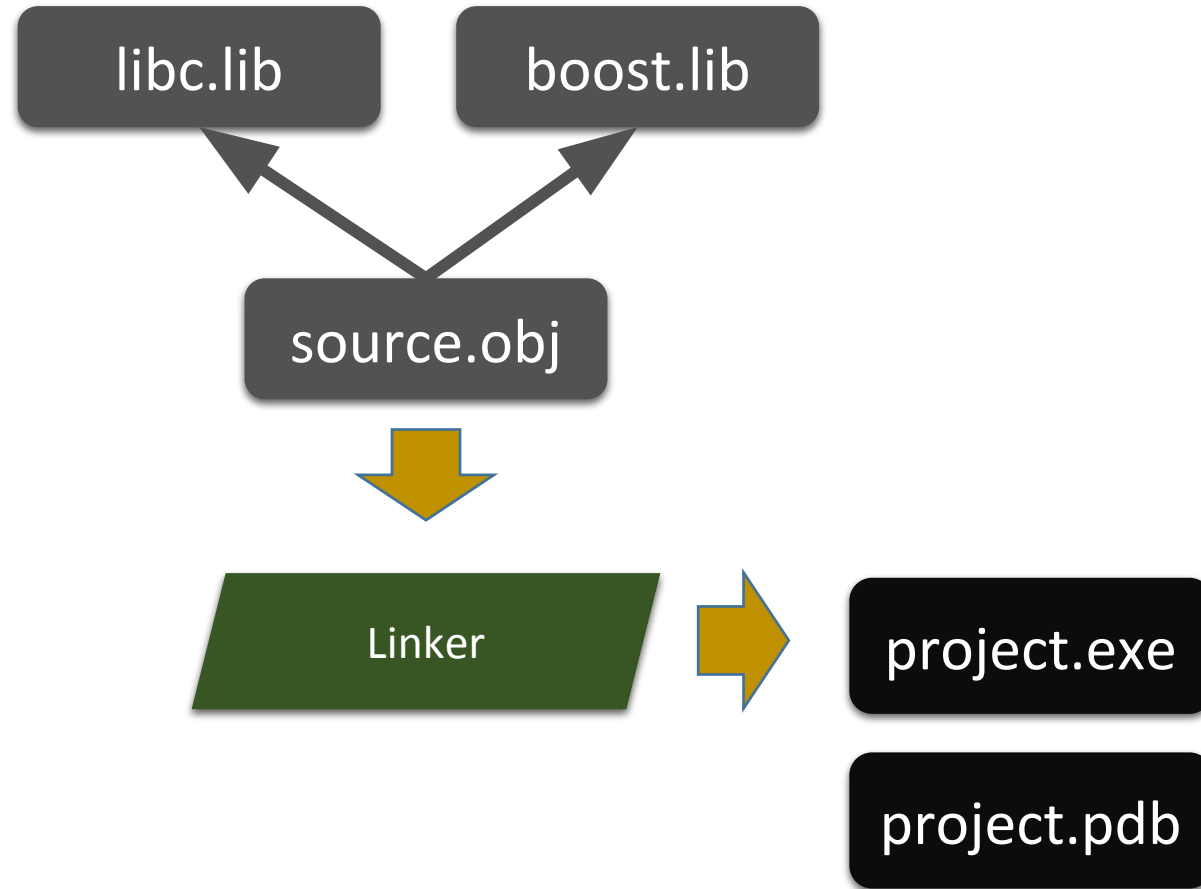
Linker



Linker



Linker (Visual Studio)



Linker

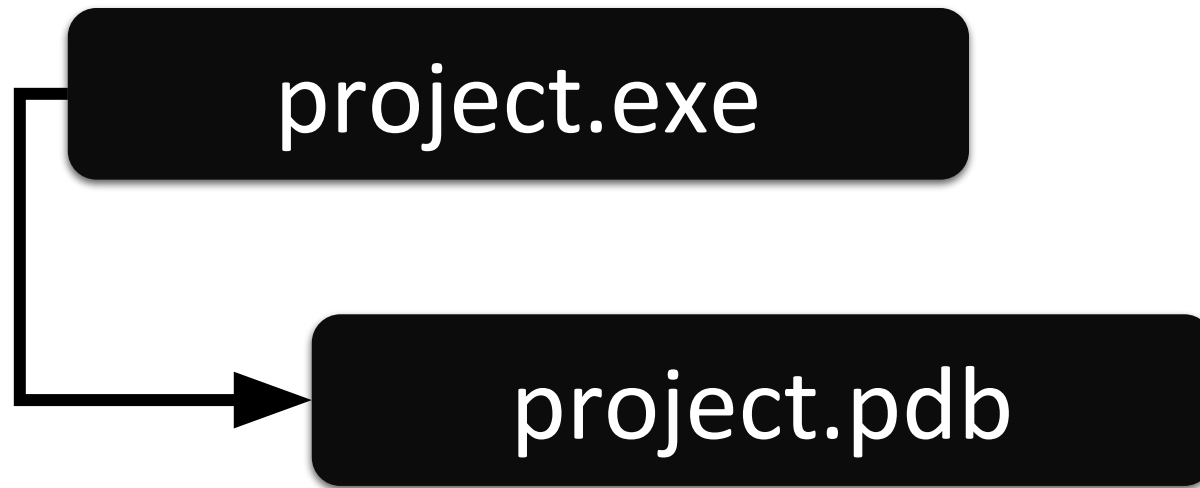
project.exe

Linker

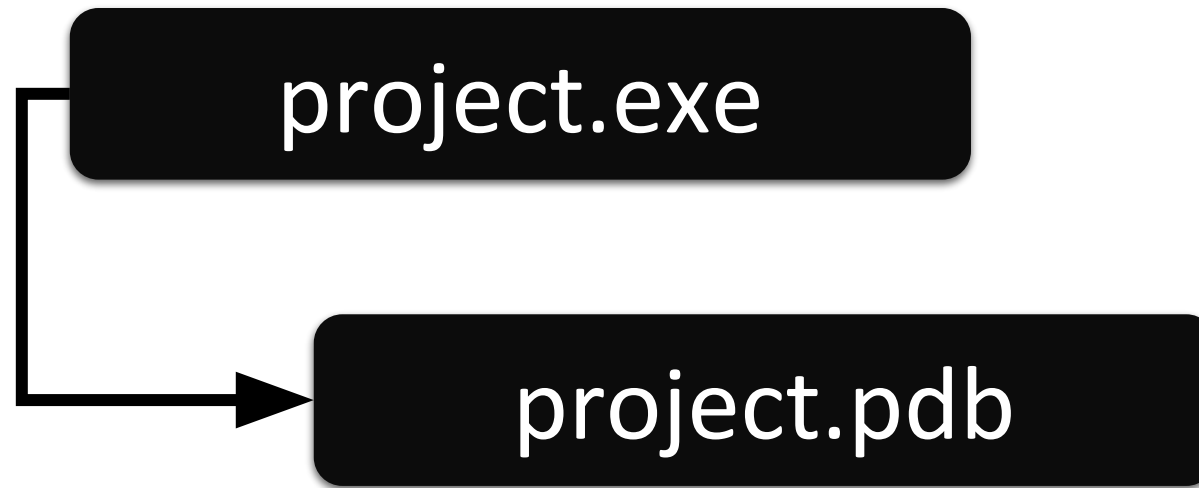


project.exe

Linker



Linker

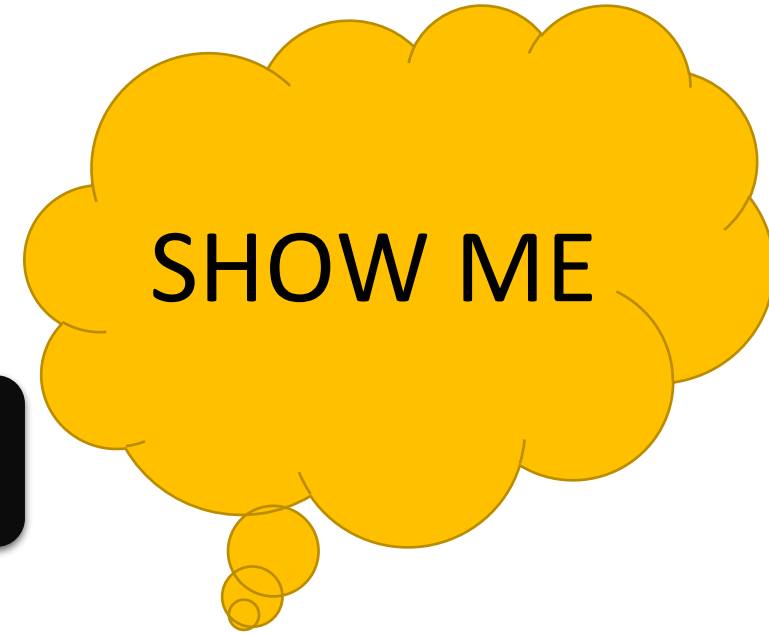
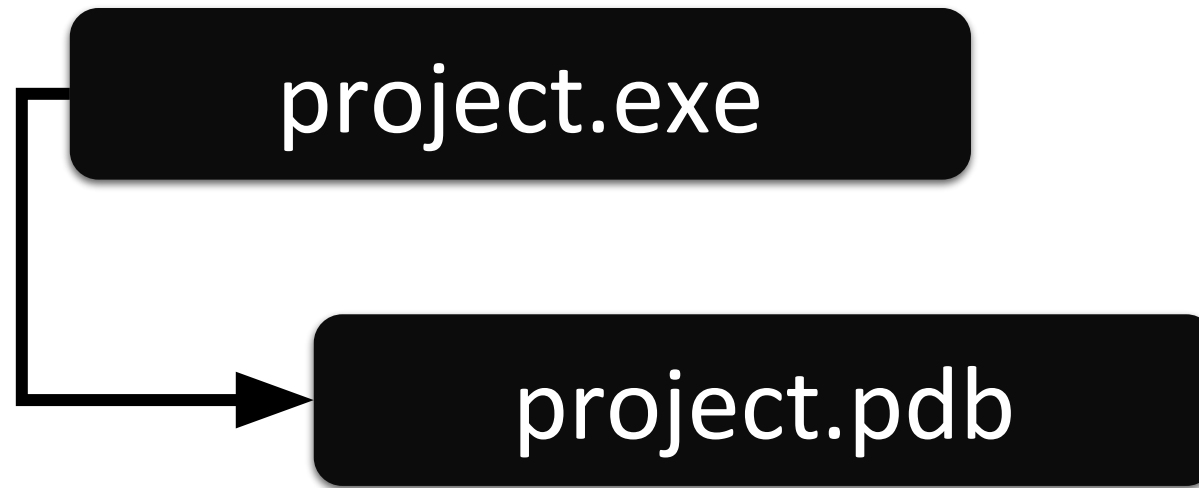


C:\

Administrator: C:\Win

```
C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release>strings Using.exe | grep ".pdb"  
C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release\Using.pdb  
C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release>_
```

Linker



C:\

Administrator: C:\Win

```
C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release>strings Using.exe | grep ".pdb"  
C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release\Using.pdb  
C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release>_
```

Symbol Server



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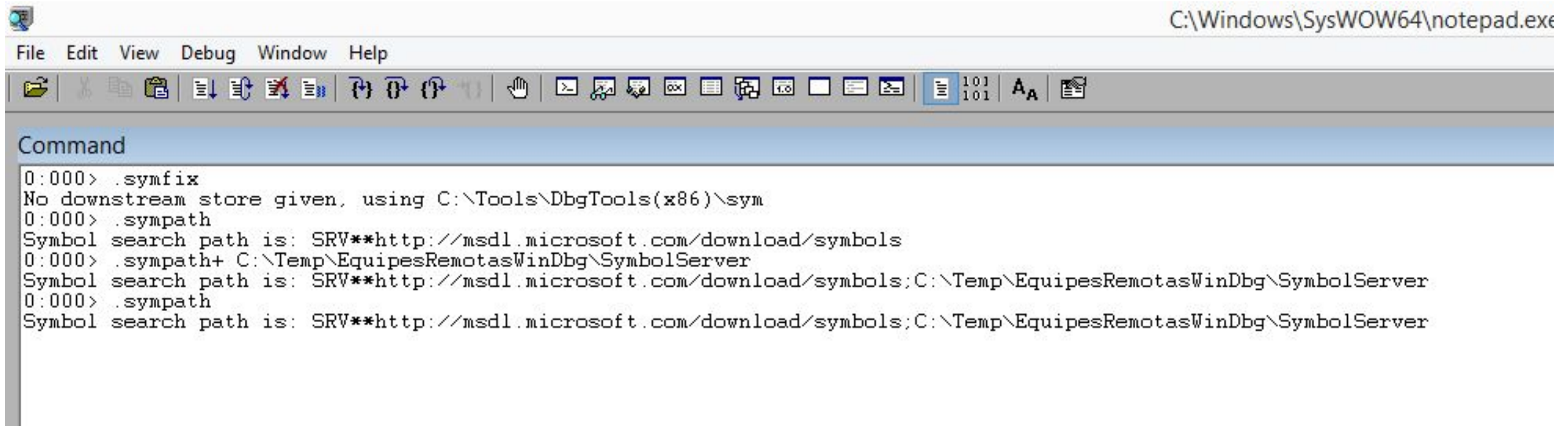
O que é o Symbol Server?

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- Um endereço http (<http://msdl.microsoft.com/download/symbols>)
- Uma pasta (C:\Temp\EquipesRemotasWinDbg\SymbolServer)

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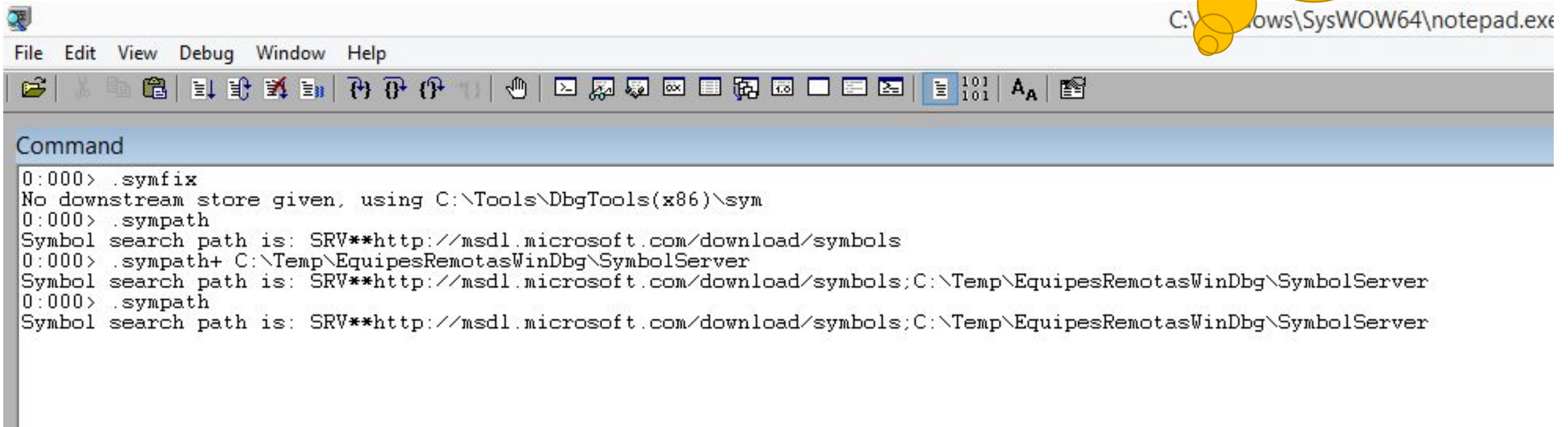


```
C:\Windows\SysWOW64\notepad.exe
File Edit View Debug Window Help
[Toolbar]
Command
0:000> .symfix
No downstream store given, using C:\Tools\DbgTools(x86)\sym
0:000> .sympath
Symbol search path is: SRV**http://msdl.microsoft.com/download/symbols
0:000> .sympath+ C:\Temp\EquipesRemotasWinDbg\SymbolServer
Symbol search path is: SRV**http://msdl.microsoft.com/download/symbols;C:\Temp\EquipesRemotasWinDbg\SymbolServer
0:000> .sympath
Symbol search path is: SRV**http://msdl.microsoft.com/download/symbols;C:\Temp\EquipesRemotasWinDbg\SymbolServer
```

O que é o Symbol Server?

SHOW ME

- Um endereço http (<http://msdl.microsoft.com/download/symbols>)
- Uma pasta (C:\Temp\EquipesRemotasWinDbg\SymbolServer)





The screenshot shows a Windows command prompt window titled "C:\Windows\SysWOW64\notepad.exe". The window has a menu bar with "File", "Edit", "View", "Debug", "Window", and "Help". Below the menu bar is a toolbar with various icons. The command prompt shows the following commands and output:

```
0:000> .symfix
No downstream store given, using C:\Tools\DbgTools(x86)\sym
0:000> .sympath
Symbol search path is: SRV**http://msdl.microsoft.com/download/symbols
0:000> .sympath+ C:\Temp\EquipesRemotasWinDbg\SymbolServer
Symbol search path is: SRV**http://msdl.microsoft.com/download/symbols;C:\Temp\EquipesRemotasWinDbg\SymbolServer
0:000> .sympath
Symbol search path is: SRV**http://msdl.microsoft.com/download/symbols;C:\Temp\EquipesRemotasWinDbg\SymbolServer
```

Personal Symbol Server

<https://github.com/Caloni/GitIndex>


 This repository Search Pull requests Issues Gist



 Caloni / **GitIndex** Unwatch 1












Versão que varre PDBs e insere URLs do GitHub com comando curl para baixá-los. — Edit

1 commit 1 branch 0 releases 1 contributor

Branch: master GitIndex / +

Versão que varre PDBs e insere URLs do GitHub com comando curl para b... 

 Caloni authored on 26 May latest commit 3c347d9fc0 

 gitindex.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 gitindex.py	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 indexsource.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 indexsymbols.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 pdbread.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 pdbsrcread.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 pdbstream.txt	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 pdbwrite.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 srcsrv.ini	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 srcsrv.txt	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 srcsrvgit.txt	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago

Personal Symbol Server

Versão que varre PDBs e insere URLs do GitHub com comando curl para b... ...		
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Personal Symbol Server

Debugging Tools for Windows (WinDbg, KD, CDB, NTSD)

Start here for an overview of Debugging Tools for Windows. This tool set includes WinDbg and other debuggers.

3 ways to get Debugging Tools for Windows

- **As part of the WDK**

Install Microsoft Visual Studio and then install the Windows Driver Kit (WDK). Debugging Tools for Windows is included in the WDK. You can [get the integrated environment here](#).

- **As part of the Windows SDK**

Install the Windows Software Development Kit (SDK). Debugging Tools for Windows is included in the Windows SDK. You can [get the Windows SDK here](#).

- **As a standalone tool set**

If you want to download only Debugging Tools for Windows, [install the Windows SDK](#), and, during the installation, select the **Debugging Tools for Windows** box and clear all the other boxes.

Personal Symbol Server

Indexsymbols.bat



```
1 "c:\Tools\DbgTools(x86)\symstore"  
2 add /r  
3 /f c:\Temp\EquipesRemotasWinDbg\SourceServer  
4 /s c:\Temp\EquipesRemotasWinDbg\SymbolServer  
5 /t "SrcSrvTest"  
6
```

Personal Symbol Server

Indexsymbols.bat



SHOW ME

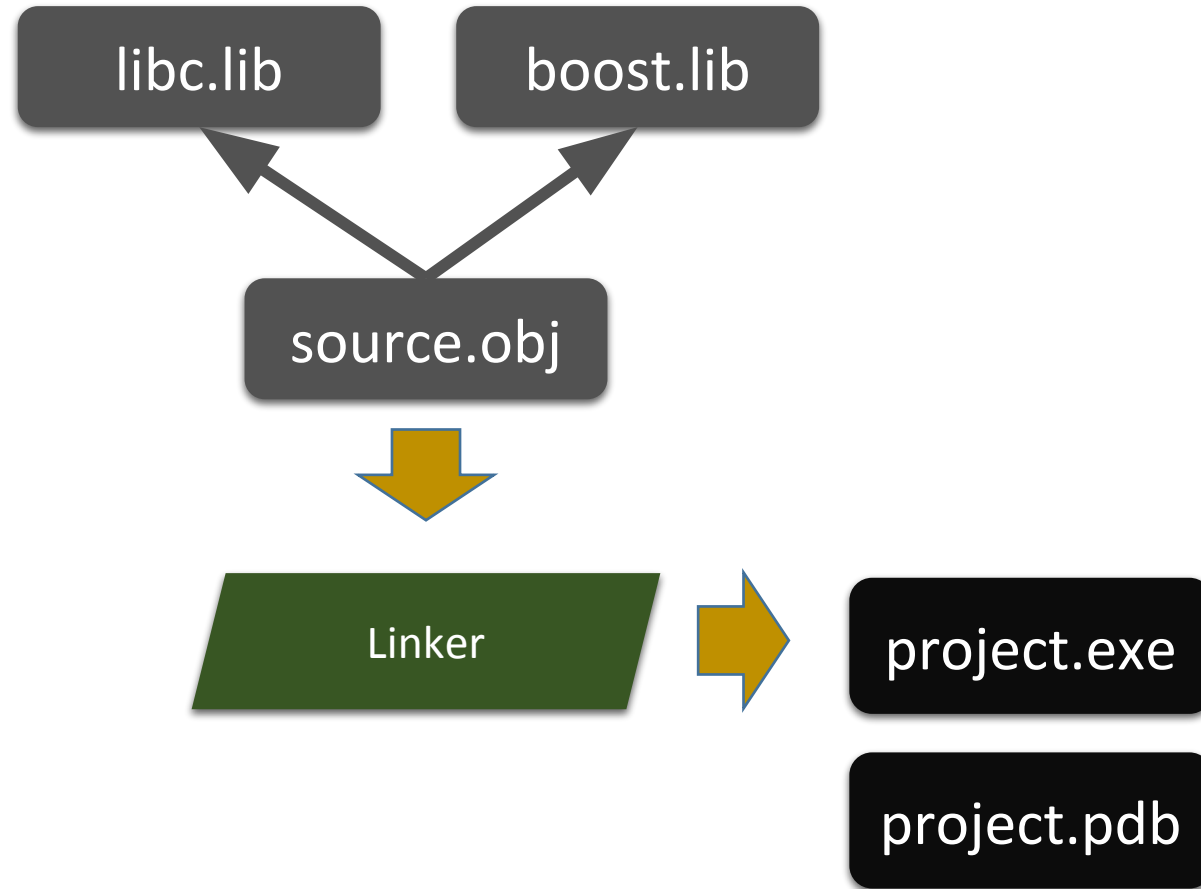


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2 add /r  
3 /f c:\Temp\EquipesRemotasWinDbg\SourceServer  
4 /s c:\Temp\EquipesRemotasWinDbg\SymbolServer  
5 /t "SrcSrvTest"  
6
```

Personal Symbol Source Server (PSSS...)

 gitindex.bat	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 gitindex.py	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
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Linker



Linker

project.pdb

PDB

project.pdb

PDB

project.pdb

```
81545185567727238743408424336966294373947433127389845
33854549595925313847145501894745404155499197255276953
70361832798066980609221885182983225546510781982463750
96937451453798220190046883456555436496387398259827608
08282241158135941847431546376564238429431959294908542
74305985655247509601448895363168347007972756708973873
13966179123159803712029626729925709240151652184162485
23287753822185209451427300843837116402551708672680453
12585537000472147191105937263769329877164825465521703
1459484217886860463470304651427541449681824626263715
44847383347222847858304465979322062041142773609621391
89675849273700878862995429559709375086507895979506136
22225974524953929857718382466563608422309323564933319
71273324638903589959665976085978670881697575135388989
90957274473912060819716512301431756958659135182895074
72278050575185142019801654350585142995951252953523990
95380856238556271461235708867274584981175538624768254
18871753870570984755737822457535080930815522064720433
50972351247659768285836574801467293090626885743527395
5892042687230478132630934258602166515958829876578286
60643892247342079103582475233254268246208237572860746
```

PDB

project.pdb

```
81545185567727238743408424336966294373947433127389845
33854549595925313847145501894745404155499197255276953
70361832798066980609221885182983225546510781982463750
96937451453798220190046883456555436496387398259827608
08282241158135941847431546376564238429431959294908542
74305985655247509601448895363168347007972756708973873
1396617912359803712029626729925709240151652184162485
23287753822185209451427300843837116402551708672680453
12585537000472147191105937263769329877164825465521703
1459484217886860463470304651427541449681824626263715
44847383347222847558304465979322062041142773609621391
89675849273700878862995429559709375086507895979506136
22725974524953929857718382466563608422309323564933319
71273324638903589959665976085978670881697575135388989
90957274473912060819716512301431756958659135182895074
72278050575185142019801654350585142995951252953523990
95380856238556271461235708867274584981175538624768254
18871753970570984755737822457535080930815522064720433
50972351247659768285836574801467293090626885743527395
5892042687230478132630934258602166515958829876578286
60643892247342079183582475233254268246208237572860746
```

STREAMS

PDB

project.pdb

1
0
0
1
0
1
1
1
0
1
0
1
0

?

PDB

project.pdb

1
0
0
1
0
1
1
0
1
0
1
0

Anything!

Personal Symbol Source Server (PSSS...)

Pdbread.bat



```
1 "c:\Tools\DbgTools(x86)\srcsrv\pdbstr.exe" -r  
2 -p:C:\Temp\EquipasRemotasWinDbg\_SourceServer\Using\Release\Using.pdb  
3 -s:srcsrv  
4
```

~

Personal Symbol Source Server (PSSS)



SHOW ME

Pdbread.bat



```
1 "c:\Tools\DbgTools(x86)\srcsrv\pdbstr.exe" -r
2 -p:C:\Temp\EquipesRemotasWinDbg\_SourceServer\Using\Release\Using.pdb
3 -s:srcsrv
4
```

~

Personal Symbol Source Server (PSSS...)

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 srcsrv.ini	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 srcsrv.txt	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago
 srcsrvgit.txt	Versão que varre PDBs e insere URLs do GitHub com comando curl para b...	3 months ago

Personal Symbol Source Server (PSSS...)

Pdbwrite.bat



```
1 "c:\Tools\DbgTools(x86)\srcsrv\pdbstr.exe" -w  
2 -p:C:\Temp\EquipasRemotasWinDbg\SourceServer\Using\Release\Using.pdb  
3 -s:srcsrv  
4 -i:srcsrv.txt  
5
```

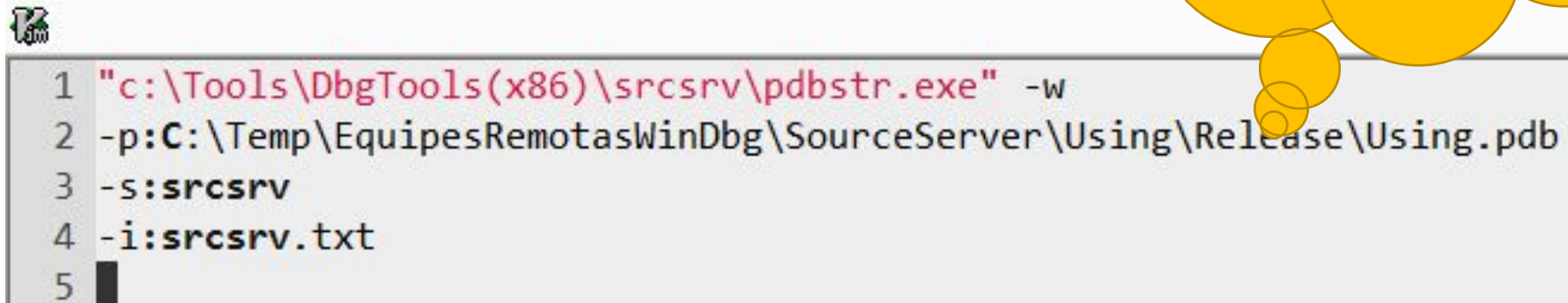
~
~

Personal Symbol Source Server (PSSS)




SHOW ME

Pdbwrite.bat



```
1 "c:\Tools\DbgTools(x86)\srcsrv\pdbstr.exe" -w
2 -p:C:\Temp\EquipasRemotasWinDbg\SourceServer\Using\Release\Using.pdb
3 -s:srcsrv
4 -i:srcsrv.txt
5
```


Personal Symbol Source Server (PSSS...)



srcsrv.txt (C:\Temp\B

```
1 SRCSRV: ini -----
2 VERSION=1
3 INDEXVERSION=2
4 VERCTRL=Subversion
5 DATETIME=Sun May 24 22:51:33 2015
6 SRCSRV: variables -----
7 SVNUSER=username
8 SVNPASS=Password
9 SVN_EXTRACT_TARGET=%targ%\%fnfile%(%var1%)
10 SVN_EXTRACT_CMD=cmd /c curl.exe "%var2%" > "%svn_extract_target%"
11 SRCSRVTRG=%SVN_extract_target%
12 SRCSRVCMD=%SVN_extract_cmd%
13 SRCSRV: source files -----
14 c:\temp\srcsrv\src\trunk\consoleapplication1\stdafx.h*https://raw.githubusercontent.com/Caloni/
15 c:\temp\srcsrv\src\trunk\consoleapplication1\targetver.h*https://raw.githubusercontent.com/Calo
16 c:\temp\srcsrv\src\trunk\consoleapplication1\stdafx.cpp*https://raw.githubusercontent.com/Calo
17 c:\temp\srcsrv\src\trunk\consoleapplication1\debug\consoleapplication1.pch*https://raw.githubusercontent.com/Calo
  ConsoleApplication1.pch*2
18 c:\temp\srcsrv\src\trunk\consoleapplication1\source2.cpp*https://raw.githubusercontent.com/Calo
```

Persc

```
C:\Temp\EquipesRemotasWinDbg\GitIndex>gitindex.py
usage: gitindex.py [-h] --dbgtools DBGTOOLS --pdbpath PDBPATH --projname
                  PROJNAME --repo REPO
gitindex.py: error: argument --dbgtools is required

C:\Temp\EquipesRemotasWinDbg\GitIndex>gitindex.bat

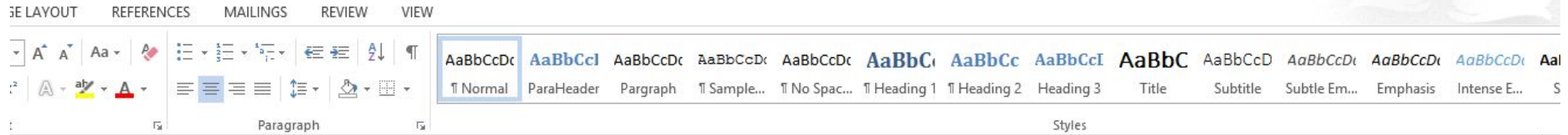
C:\Temp\EquipesRemotasWinDbg\GitIndex>gitindex.py --dbgtools "c:\Tools\DbgTools(x86)" --pdbpath C:\Temp\EquipesRemotasWinDbg\SourceServer
C:\Temp\EquipesRemotasWinDbg\SourceServer\Using\Release\Using.pdb
C:\Temp\EquipesRemotasWinDbg\SourceServer\Using\Release\vc120.pdb
C:\Temp\EquipesRemotasWinDbg\GitIndex>pdbread

C:\Temp\EquipesRemotasWinDbg\GitIndex>"c:\Tools\DbgTools(x86)\srcsrv\pdbstr.exe" -r -p:C:\Temp\EquipesRemotasWinDbg\SourceServer\Using\Release\Using.pdb
SRCSRV: ini -----
VERSION=1
INDEXVERSION=2
VERCTRL=GitHub
DATETIME=Sun May 24 22:51:33 2015
SRCSRV: variables -----
GIT_REVNO=b5d3c79e7599cdafc528372a73f7452e7eef61c1
GIT_WEB_ADDRESS=https://raw.githubusercontent.com/Test
GIT_URL=%git_web_address%/%git_revno%/%var2%
GIT_EXTRACT_TARGET=%targ%\%fnfile%(var1%)
GIT_EXTRACT_CMD=cmd /c curl.exe "%git_url%" > "%git_extract_target%"
SRCSRVTRG=%git_extract_target%
SRCSRVCMD=%git_extract_cmd%
SRCSRV: source files -----
c:\temp\equipesremotaswindbg\sourceserver\using\using.h*Using/Using.h
c:\temp\equipesremotaswindbg\sourceserver\using\header.h*Using/Header.h
c:\temp\equipesremotaswindbg\sourceserver\using\file1.cpp*Using/File1.cpp
c:\temp\equipesremotaswindbg\sourceserver\using\file2.cpp*Using/File2.cpp
c:\temp\equipesremotaswindbg\sourceserver\using\file3.cpp*Using/File3.cpp
c:\temp\equipesremotaswindbg\sourceserver\using\lib1.cpp*Using/Lib1.cpp
c:\temp\equipesremotaswindbg\sourceserver\using\using.cpp*Using/Using.cpp
SRCSRV: end -----
```

.)

Personal Symbol Source Server (PSSS...)

```
SRCSRV: ini -----  
VERSION=1  
INDEXVERSION=2  
VERCTRL=GitHub  
DATETIME=Sun May 24 22:51:33 2015  
SRCSRV: variables -----  
GIT_REVNO=b5d3c79e7599cdafc528372a73f7452e7eef61c1  
GIT_WEB_ADDRESS=https://raw.githubusercontent.com/Test  
GIT_URL=%git_web_address%/%git_revno%/%var2%  
GIT_EXTRACT_TARGET=%targ%\%fnfile%(%var1%)  
GIT_EXTRACT_CMD=cmd /c curl.exe "%git_url%" > "%git_extract_target%"  
SRCSRVTRG=%git_extract_target%  
SRCSRVCMD=%git_extract_cmd%  
SRCSRV: source files -----  
c:\temp\equipesremotaswindbg\sourceserver\using\using.h*Using/Using.h  
c:\temp\equipesremotaswindbg\sourceserver\using\header.h*Using/Header.h  
c:\temp\equipesremotaswindbg\sourceserver\using\file1.cpp*Using/File1.cpp  
c:\temp\equipesremotaswindbg\sourceserver\using\file2.cpp*Using/File2.cpp  
c:\temp\equipesremotaswindbg\sourceserver\using\file3.cpp*Using/File3.cpp  
c:\temp\equipesremotaswindbg\sourceserver\using\lib1.cpp*Using/Lib1.cpp  
c:\temp\equipesremotaswindbg\sourceserver\using\using.cpp*Using/Using.cpp  
SRCSRV: end -----
```



Microsoft Source Server

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Usage and Source Indexing	3
Using Source Server with a Debugger	3
Retrieving the Source File	3

engine that creates a command line that can be used to extract the proper source file from the source control system. Your code should not call `Symsrv.dll` directly. To integrate its functionality into your application, use the **SymGetSourceFile** function.

The first version of source server works as follows. (This behavior may change in future versions.)























First, the client calls **SrcSrvInit** with the target path to be used as a base for all source file extractions. This path is stored in the special variable TARG.

When `dbghelp` loads a module's PDB file, it extracts the `SrcSrv` stream from the PDB and passes this data block to `SrcSrv` by calling **SrcSrvLoadModule**.























Then when `dbghelp` needs to grab a source file, it calls **SrcSrvGetFile** to retrieve a specified source file from version control.

`SrcSrv` looks through all the source file entries in the data block for an entry that matches exactly the requested source

(C:) > Tools > DbgTools(x86) > srcsrv

Name	Date mod
 cv2http.cmd	1/9/2008
 cv2http.pl	1/9/2008
 cvs.pm	1/9/2008
 cvsindex.cmd	1/9/2008
 dbghelp.dll	3/20/2008
 mspdb60.dll	8/13/2015
 p4.pm	1/9/2008
 p4index.cmd	1/9/2008
 pdbstr.exe	3/20/2008
 srcsrv.dll	3/20/2008
 srcsrv.doc	3/20/2008
 srcsrv.ini	7/7/2014
 srctool.exe	3/20/2008
 ssindex.cmd	1/9/2008
 svn.pm	5/24/2015
 svnindex.cmd	1/9/2008
 tfs.pm	1/9/2008
 tfsindex.cmd	1/9/2008
 vss.pm	1/9/2008
 vssdump.exe	3/20/2008
 vssindex.cmd	1/9/2008
 walk.cmd	1/9/2008

(C:) > Tools > DbgTools(x86) > srcsrv

Name	Date mod
 cv2http.cmd	1/9/2008
 cv2http.pl	1/9/2008
 cvs.pm	1/9/2008
 cvsindex.cmd	1/9/2008
 dbghelp.dll	3/20/2008
 mspdb60.dll	8/13/2015
 p4.pm	1/9/2008
 p4index.cmd	1/9/2008
 pdbstr.exe	3/20/2008
 srcsrv.dll	3/20/2008
 srcsrv.doc	3/20/2008
 srcsrv.ini	7/7/2014
 srctool.exe	3/20/2008
 ssindex.cmd	1/9/2008
 svn.pm	5/24/2015
 svnindex.cmd	1/9/2008
 tfs.pm	1/9/2008
 tfsindex.cmd	1/9/2008
 vss.pm	1/9/2008
 vssdump.exe	3/20/2008
 vssindex.cmd	1/9/2008
 walk.cmd	1/9/2008

























(C:) > Tools > DbgTools(x86) > srcsrv

Name	Date mod
cv2http.cmd	1/9/2008
cv2http.pl	1/9/2008
cvs.pm	1/9/2008
cvsindex.cmd	1/9/2008
dbghelp.dll	3/20/2008
mspdb60.dll	8/13/2015
p4.pm	1/9/2008
p4index.cmd	1/9/2008
pdbstr.exe	3/20/2008
srcsrv.dll	3/20/2008
srcsrv.doc	3/20/2008
srcsrv.ini	7/7/2014
srctool.exe	3/20/2008
ssindex.cmd	1/9/2008
svn.pm	5/24/2015
svnindex.cmd	1/9/2008
tfs.pm	1/9/2008
tfsindex.cmd	1/9/2008
vss.pm	1/9/2008
vssdump.exe	3/20/2008
vssindex.cmd	1/9/2008
walk.cmd	1/9/2008



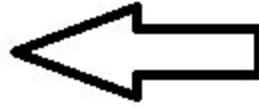
(C:) > Tools > DbgTools(x86) > srcsrv

Name	Date mod
 cv2http.cmd	1/9/2008
 cv2http.pl	1/9/2008
 cvs.pm	1/9/2008
 cvsindex.cmd	1/9/2008
 dbghelp.dll	3/20/2008
 mspdb60.dll	8/13/2015
 p4.pm	1/9/2008
 p4index.cmd	1/9/2008
 pdbstr.exe	3/20/2008
 srcsrv.dll	3/20/2008
 srcsrv.doc	3/20/2008
 srcsrv.ini	7/7/2014
 srctool.exe	3/20/2008
 ssindex.cmd	1/9/2008
 svn.pm	5/24/2015
 svnindex.cmd	1/9/2008
 tfs.pm	1/9/2008
 tfsindex.cmd	1/9/2008
 vss.pm	1/9/2008
 vssdump.exe	3/20/2008
 vssindex.cmd	1/9/2008
 walk.cmd	1/9/2008



(C:) > Tools > DbgTools(x86) > srcsrv

Name	Date mod
cv2http.cmd	1/9/2008
cv2http.pl	1/9/2008
cvs.pm	1/9/2008
cvsindex.cmd	1/9/2008
dbghelp.dll	3/20/2008
mspdb60.dll	8/13/2015
p4.pm	1/9/2008
p4index.cmd	1/9/2008
pdbstr.exe	3/20/2008
srcsrv.dll	3/20/2008
srcsrv.doc	3/20/2008
srcsrv.ini	7/7/2014
srctool.exe	3/20/2008
ssindex.cmd	1/9/2008
svn.pm	5/24/2015
svnindex.cmd	1/9/2008
tfs.pm	1/9/2008
tfsindex.cmd	1/9/2008
vss.pm	1/9/2008
vssdump.exe	3/20/2008
vssindex.cmd	1/9/2008
walk.cmd	1/9/2008



Personal Symbol Source Server (PSSS...)



```
1 import os
2 from git import Repo
3 import subprocess
4 from subprocess import check_output as qx
5 import argparse
6
```

P

```
31
32 def indexpdb(pdbpath):
33     output = qx([args.srcTool, pdbpath, '-r'])
34     outputFiles = output.split('\r\n')
35
36     pdbStreamFile = open('pdbstream.txt', 'w')
37     print >>pdbStreamFile, 'SRCSRV: ini -----'
38     print >>pdbStreamFile, 'VERSION=1'
39     print >>pdbStreamFile, 'INDEXVERSION=2'
40     print >>pdbStreamFile, 'VERCTRL=GitHub'
41     print >>pdbStreamFile, 'DATETIME=Sun May 24 22:51:33 2015'
42     print >>pdbStreamFile, 'SRCSRV: variables -----'
43     print >>pdbStreamFile, 'GIT_REVNO=' + revno
44     print >>pdbStreamFile, 'GIT_WEB_ADDRESS=' + args.webAddr
45     print >>pdbStreamFile, 'GIT_URL=%git_web_address%/git_revno%/var2%'
46     print >>pdbStreamFile, 'GIT_EXTRACT_TARGET=%targ%\%fnfile%(var1%)'
47     print >>pdbStreamFile, 'GIT_EXTRACT_CMD=cmd /c curl.exe "%git_url%" > "%git_extract_target%"'
48     print >>pdbStreamFile, 'SRCSRVTRG=%git_extract_target%'
49     print >>pdbStreamFile, 'SRCSRVCMD=%git_extract_cmd%'
50
51     print >>pdbStreamFile, 'SRCSRV: source files -----'
52     for f in outputFiles:
53         if os.path.commonprefix([args.repo, f.lower()]) == args.repo:
54             relPath = os.path.relpath(f, args.repo)
55             relPath = correctPath(args.repo, relPath)
56             if f:
57                 print >>pdbStreamFile, f + '*' + relPath.replace('\\', '/')
58     print >>pdbStreamFile, 'SRCSRV: end -----'
59     pdbStreamFile.close()
60
61     subprocess.call([args.pdbStr, '-w', '-p:' + pdbpath, '-s:srcsrv', '-i:pdbstream.txt'])
62
```


P

```
31
32 def indexpdb(pdbpath):
33     output = qx([args.srcTool, pdbpath, '-r'])
34     outputFiles = output.split('\r\n')
35
36     pdbStreamFile = open('pdbstream.txt', 'w')
37     print >>pdbStreamFile, 'SRCSRV: ini -----'
38     print >>pdbStreamFile, 'VERSION=1'
39     print >>pdbStreamFile, 'INDEXVERSION=2'
40     print >>pdbStreamFile, 'VERCTRL=GitHub'
41     print >>pdbStreamFile, 'DATETIME=Sun May 24 22:51:33 2015'
42     print >>pdbStreamFile, 'SRCSRV: variables -----'
43     print >>pdbStreamFile, 'GIT_REVNO=' + revno
44     print >>pdbStreamFile, 'GIT_WEB_ADDRESS=' + args.webAddr
45     print >>pdbStreamFile, 'GIT_URL=%git_web_address%/git_revno%/var2%'
46     print >>pdbStreamFile, 'GIT_EXTRACT_TARGET=%targ%\%fnfile%(var1%)'
47     print >>pdbStreamFile, 'GIT_EXTRACT_CMD=cmd /c curl.exe "%git_url%" > "%git_extract_target%"'
48     print >>pdbStreamFile, 'SRCSRVTRG=%git_extract_target%'
49     print >>pdbStreamFile, 'SRCSRVCMD=%git_extract_cmd%'
50
51     print >>pdbStreamFile, 'SRCSRV: source files -----'
52     for f in outputFiles:
53         if os.path.commonprefix([args.repo, f.lower()]) == args.repo:
54             relPath = os.path.relpath(f, args.repo)
55             relPath = correctPath(args.repo, relPath)
56             if f:
57                 print >>pdbStreamFile, f + '*' + relPath.replace('\\', '/')
58     print >>pdbStreamFile, 'SRCSRV: end -----'
59     pdbStreamFile.close()
60
61     subprocess.call([args.pdbStr, '-w', '-p:' + pdbpath, '-s:srcsrv', '-i:pdbstream.txt'])
62
```

PDB

project.pdb

```
81545185567727238743408424336966294373947433127389845
33854549595925313847145501894745404155499197255276953
70361832798066980609221885182983225546510781982463750
96937451453798220190046883456555436496387398259827608
08282241158135941847431546376564238429431959294908542
74305985655247509601448895363168347007972756708973873
1396617912359803712029626729925709240151652184162485
23287753822185209451427300843837116402551708672680453
12585537000472147191105937263769329877164825465521703
1459484217886860463470304651427541449681824626263715
44847383347222847558304465979322062041142773609621391
89675849273700878862995429559709375086507895979506136
22725974524953929857718382466563608422309323564933319
71273324638903589959665976085978670881697575135388989
90957274473912060819716512301431756958659135182895074
72278050575185142019801654350585142995951252953523990
95380856238556271461235708867274584981175538624768254
18871753970570984755737822457535080930815522064720433
50972351247659768285836574801467293090626885743527395
5892042687230478132630934258602166515958829876578286
60643892247342079183582475233254268246208237572860746
```

STREAMS

PDB

project.pdb

1
0
1
0
1
0
0
1
0
1
1
0

= source

PDB

project.pdb

1
0
1
0
1
0
0
1
0
1
1
0



= source

PDB

project.pdb

1

```
C:\Temp\EquipasRemotasWinDbg\GitIndex>cat srctool.bat
"c:\Tools\DbgTools(x86)\srcsrv\srctool.exe" C:\Temp\EquipasRemotasWinDbg\SourceServer\Using\Release\Using.pdb -r

C:\Temp\EquipasRemotasWinDbg\GitIndex>srctool.bat | grep -i "using"
C:\Temp\EquipasRemotasWinDbg\GitIndex>"c:\Tools\DbgTools(x86)\srcsrv\srctool.exe" C:\Temp\EquipasRemotasWinDbg\Sou
c:\temp\equipasremotaswindbg\sourceServer\using\using.h
c:\temp\equipasremotaswindbg\sourceServer\using\header.h
c:\temp\equipasremotaswindbg\sourceServer\using\file1.cpp
c:\temp\equipasremotaswindbg\sourceServer\using\file2.cpp
c:\temp\equipasremotaswindbg\sourceServer\using\file3.cpp
c:\temp\equipasremotaswindbg\sourceServer\using\lib1.cpp
c:\temp\equipasremotaswindbg\sourceServer\using\using.cpp

C:\Temp\EquipasRemotasWinDbg\GitIndex>
```

0

PDB

project.pdb

SHOW ME

1

```
C:\Temp\EquipasRemotasWinDbg\GitIndex>cat srctool.bat
"c:\Tools\DbgTools(x86)\srcsrv\srctool.exe" C:\Temp\EquipasRemotasWinDbg\SourceServer\Using\Release\Using.pdb -r

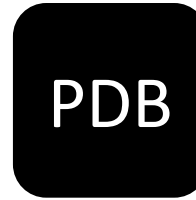
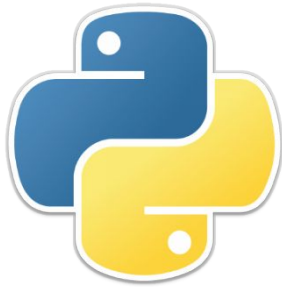
C:\Temp\EquipasRemotasWinDbg\GitIndex>srctool.bat | grep -i "using"
C:\Temp\EquipasRemotasWinDbg\GitIndex>"c:\Tools\DbgTools(x86)\srcsrv\srctool.exe" C:\Temp\EquipasRemotasWinDbg\Sou
c:\temp\equipasremotaswindbg\sourceserver\using\using.h
c:\temp\equipasremotaswindbg\sourceserver\using\header.h
c:\temp\equipasremotaswindbg\sourceserver\using\file1.cpp
c:\temp\equipasremotaswindbg\sourceserver\using\file2.cpp
c:\temp\equipasremotaswindbg\sourceserver\using\file3.cpp
c:\temp\equipasremotaswindbg\sourceserver\using\lib1.cpp
c:\temp\equipasremotaswindbg\sourceserver\using\using.cpp

C:\Temp\EquipasRemotasWinDbg\GitIndex>
```

0

Personal Symbol Source Server (PSSS...)

"C:\Temp\EquipesRemotasWinDbg\SourceServer"



```
...  
f:\dd\externalapis\windows\winblue\sdk\inc\namespaceapi.h  
f:\dd\tools\devdiv\inc\ddbanned.h  
f:\dd\vctools\crt\crtw32\h\vadefs.h  
f:\dd\vctools\crt\crtw32\h\cruntime.h  
c:\temp\equipesremotaswindbg\sourceserver\using\using.h  
c:\temp\equipesremotaswindbg\sourceserver\using\header.h  
c:\temp\equipesremotaswindbg\sourceserver\using\file1.cpp  
c:\temp\equipesremotaswindbg\sourceserver\using\file2.cpp  
f:\dd\vctools\crt\crtw32\misc\gs_cookie.c  
f:\binaries.x86ret\interapiscandidates\vctools\inc\vc\immintrin.h  
...
```

Personal Symbol Source Server (PSSS...)

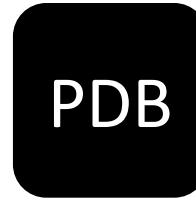
"C:\Temp\EquipesRemotasWinDbg\SourceServer"



```
...  
f:\dd\externalapis\windows\winblue\sdk\inc\namespaceapi.h  
f:\dd\tools\devdiv\inc\ddbanned.h  
f:\dd\vctools\crt\crtw32\h\vadefs.h  
f:\dd\vctools\crt\crtw32\h\cruntime.h  
c:\temp\equipesremotaswindbg\sourceserver\using\using.h  
c:\temp\equipesremotaswindbg\sourceserver\using\header.h  
c:\temp\equipesremotaswindbg\sourceserver\using\file1.cpp  
c:\temp\equipesremotaswindbg\sourceserver\using\file2.cpp  
f:\dd\vctools\crt\crtw32\misc\gs_cookie.c  
f:\binaries.x86ret\interapiscandidates\vctools\inc\vc\immintrin.h  
...
```

Personal Symbol Source Server (PSSS...)

"C:\Temp\EquipesRemotasWinDbg\SourceServer"



SRCSRV: ini -----

BLABLABLA

SRCSRV: source files -----

c:\temp\equipesremotaswindbg\sourceserver\using\using.h*Using/Using.h

c:\temp\equipesremotaswindbg\sourceserver\using\header.h*Using/Header.h

c:\temp\equipesremotaswindbg\sourceserver\using\file1.cpp*Using/File1.cpp

c:\temp\equipesremotaswindbg\sourceserver\using\file2.cpp*Using/File2.cpp

c:\temp\equipesremotaswindbg\sourceserver\using\file3.cpp*Using/File3.cpp

c:\temp\equipesremotaswindbg\sourceserver\using\lib1.cpp*Using/Lib1.cpp

c:\temp\equipesremotaswindbg\sourceserver\using\using.cpp*Using/Using.cpp

SRCSRV: end -----

Symbol Server



SYMBOLS OF THE ALCHEMISTS AND THEIR SIGNIFICATIONS.

Fire.	Air.	Water.	Water.	Earth.		
Lead.	Tin.	Iron.	Gold.	Copper.	Mercury.	Silver.
Antimony.	Arsenic.	Aqua Vitæ.	Borax.	To Purify.		
Cinnabar.	Caput Mortuum.	An Oil.	Saltpeter.	Magnet.		

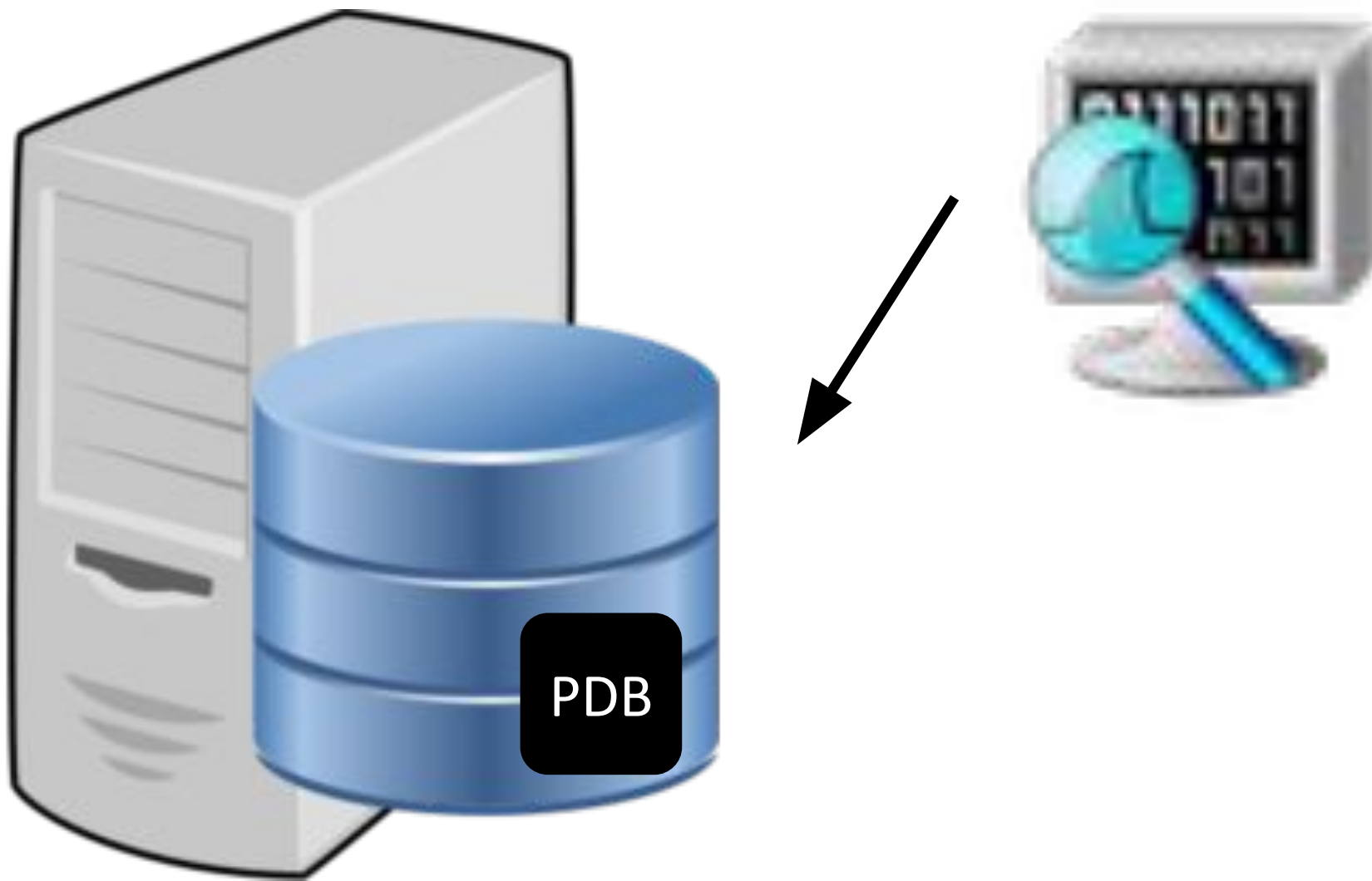
Symbol Server



SYMBOLS OF THE ALCHEMISTS AND
THEIR SIGNIFICATIONS.

Fire.	Air.	Water.	Water.	Earth.		
Lead.	Tin.	Iron.	Gold.	Copper.	Mercury.	Silver.
Antimony.	Arsenic.	Aqua Vitæ.	Borax.	To Purify.		
Cinnabar.	Caput Mortuum.	An Oil.	Salt peter.	Magnet.		

Symbol Server



PSSS v. ~~Tosca~~ GitHub

```
C:\Temp\EquipesRemotasWinDbg\GitIndex>"c:\Tools\DbgTools(x86)\srcsrv\pdbstr
SRCSRV: ini -----
VERSION=1
INDEXVERSION=2
VERCTRL=GitHub
DATETIME=Sun May 24 22:51:33 2015
SRCSRV: variables -----
GIT_REVNO=b5d3c79e7599cdafc528372a73f7452e7eef61c1
GIT_WEB_ADDRESS=https://raw.githubusercontent.com/Test
GIT_URL=%git_web_address%/%git_revno%/%var2%
GIT_EXTRACT_TARGET=%targ%\%fnfile%(%var1%)
GIT_EXTRACT_CMD=cmd /c curl.exe "%git_url%" > "%git_extract_target%"
SRCSRVTRG=%git_extract_target%
SRCSRVCMD=%git_extract_cmd%
SRCSRV: source files -----
c:\temp\equipesremotaswindbg\source\server\using\using.h*Using/Using.h
c:\temp\equipesremotaswindbg\source\server\using\header.h*Using/Header.h
```



TODO

- Obter os arquivos localmente
- Suporte a protocolo GIT remoto
- Suporte a múltiplos repositórios para mesmo PDB
- Suporte a autenticação em GIT remoto

Perguntas?



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