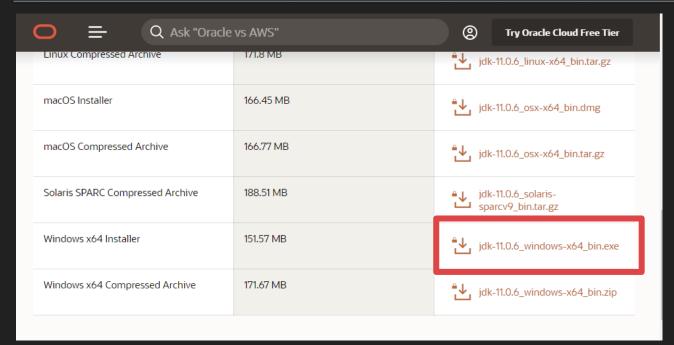
Ghidra Tutorial

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Installation: Java

O Download Java environment from following link (An Oracle account required): https://www.oracle.com/java/technologies/javase-jdk11-downloads.html



2

Download and extract Ghidra

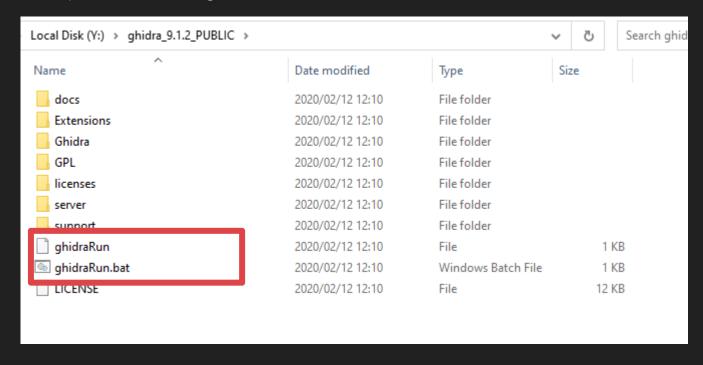
O Download Ghidra from following link: https://ghidra-sre.org/



3

Download and extract Ghidra

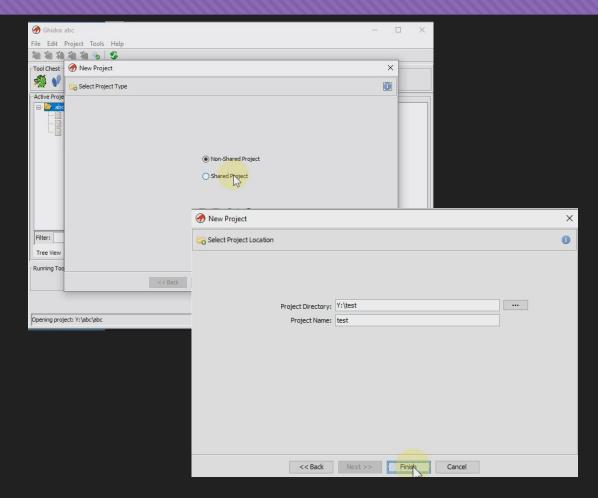
O Unzip it and run ghidraRun.bat



Create New Project

- O [File]/[New Project]
- Select [Non-shared project]
- Enter Project directory and name (ensure directory for project exists)
- O [Finish]

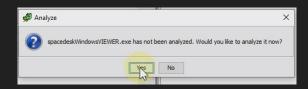
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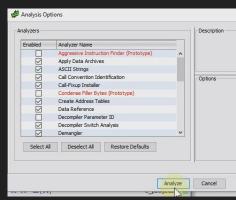


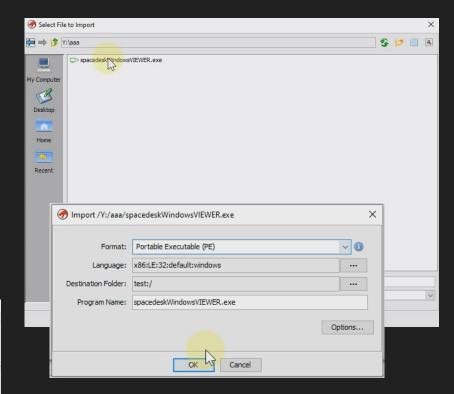
Import executable file

- O [File]/[Import File]
- Select file that you want to analysis.
- O Click [OK]
- On [Analyze] dialog, click [Yes] and [Analyze]

 Wait a moment until analysis done, progress can check by right-bottom of window.

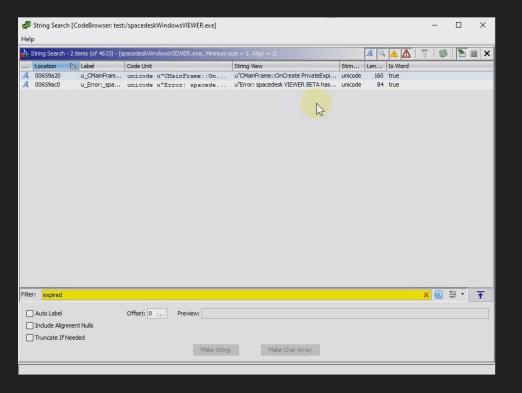






Find string reference

- We can find string reference by [Search]/[For Strings]
- O Double click on row can go to string location.



Decompile

- O After we go to referenced function, Decompile window will show this function in C.
- O As we see in right panel, local_34 is a specified date, local_14 is FILETIME converted from local_34, and local_24 is current time, local_3c is FILETIME converted from local_24.

```
Decompile: FUN_0043cfb0 - (spacedeskWindowsVIEWER.exe)
     FILETIME local 14;
     uint local_c;
     local_c = DAT_0067d21c ^ (uint)slocal_3c;
     cVar1 = FUN_0042e470();
     if ((((cVarl == '\0') && (cVarl = FUN 0042e470(), cVarl == '\0')) &&
         (cVar1 = FUN_0042e470(), cVar1 == '\0')) &s (cVar1 = FUN_0042e470(), cVar1 == '\0')) {
       FUN 0046418c();
28
29
     else {
       local 34 = 0xc07e4;
       local 30 = 0x1f0004;
       local 2c = 0x3b0017;
       local 28 = 0x3e7003b;
       BVar2 = SystemTimeToFileTime((SYSTEMTIME *)&local 34, (LPFILETIME)&local 14);
        if (BVar2 == 0) {
         FUN 00434440();
       GetSystemTime((LPSYSTEMTIME) &local 24);
       BVar2 = SystemTimeToFileTime((SYSTEMTIME *)&local_24, (LPFILETIME)&local_3c);
       if (BVar2 == 0) {
         FUN 00434440();
42
       LVar3 = CompareFileTime(slocal 14, slocal 3c);
        if (LVar3 < 0) {
         FUN 00434440();
         FUN 0046418c();
         FUN 0059b97b();
       iVar4 = OnCreate();
       if (iVar4 != -1)
         local 24 = 0;
         uStack32 = 0;
         uStack28 = 0;
         iVar4 = (**(code **)(*(int *)(param 1 + 0x208) + 0x54))();
         if (iVar4 == 0) {
           FUN 00434440();
```

Decompile

- O LVar3 is result of compare local_14 and local_3c.
- O If local_14 is less than local_3c, that is after specified date, this program will show expired dialog and no longer to use.

```
Decompile: FUN_0043cfb0 - (spacedeskWindowsVIEWER.exe)
     FILETIME local 14;
     uint local_c;
     local_c = DAT_0067d21c ^ (uint)slocal_3c;
     cVar1 = FUN_0042e470();
     if ((((cVarl == '\0') && (cVarl = FUN 0042e470(), cVarl == '\0')) &&
         (cVar1 = FUN_0042e470(), cVar1 == '\0')) &s (cVar1 = FUN_0042e470(), cVar1 == '\0')) {
       FUN 0046418c();
28
29
     else {
       local 34 = 0xc07e4;
       local 30 = 0x1f0004;
       local 2c = 0x3b0017;
       local 28 = 0x3e7003b;
       BVar2 = SystemTimeToFileTime((SYSTEMTIME *)&local 34, (LPFILETIME)&local 14);
       if (BVar2 == 0) {
         FUN 00434440();
       GetSystemTime((LPSYSTEMTIME) & local 24);
       BVar2 = SystemTimeToFileTime((SYSTEMTIME *)&local_24, (LPFILETIME)&local_3c);
       if (BVar2 == 0) {
         FUN 00434440();
42
       LVar3 = CompareFileTime(slocal 14, slocal 3c);
       if (LVar3 < 0) {
         FUN 00434440();
         FUN_0046418c();
         FUN_0059b97b();
       iVar4 = OnCreate();
       if (iVar4 != -1)
         local 24 = 0;
         uStack32 = 0;
         uStack28 = 0;
         iVar4 = (**(code **)(*(int *)(param_1 + 0x208) + 0x54))();
         if (iVar4 == 0) {
           FUN_00434440();
```