



**OSEHRA**  
Enabling Open Source in Government

# **VistA Internationalization Open Source Project Group— Localization Using Kryvich's**

**Sam Habel, PharmD**

OCTOBER 1, 2018

# Kryvich's Localizer

- <https://sites.google.com/site/kryvich/localizer>
- **Why we chose this**
  - Interoperable with ITE
  - Limited source code changes specific to get it working
  - Simple output format

# Bootstrapping Process

- **Add KDL tools to our source tree**
- **Need to compile CPRS first and create initial set of translation files**
  - Run `kdlscan.exe` against CPRS; and it will give you the files
  - Copy these files to our repository into new folders

# Boot Strapping Process

```
kdlsan.exe "..\..\..\..\..\..\..\build\CPRS\CPRS-Chart\CPRSChart.exe"
```

K.D.L. Scanner 4.1: gets localizable strings from EXE, BPL, DLL and DRC files

```
=====
```

Old language file was found. SVCS activated...

Language file "..\..\..\..\..\..\..\build\CPRS\CPRS-Chart\CPRSChart.lng" created.

# CMake files modified

CMake 3.12.0 - C:/Users/Hp/Documents/Embarcadero/10.2/Projects/Vi...

File Tools Options Help

Where is the source code: C:/Users/Hp/Documents/Embarcadero/10.2/Projects/VistaA Browse Source...

Where to build the binaries: rs/Hp/Documents/Embarcadero/10.2/Projects/VistaA/build Browse Build...

Search:   Grouped  Advanced

Name	Value
BUILD_DELPHI_XuDigSig_DIR	C:/Users/Hp/Documents/Embarcadero/10.2/Pr...
CMAKE_BUILD_TYPE	Release
LOCALIZE_USING_KRYVICH	<input type="checkbox"/>
BUILD_DELPHI	<input checked="" type="checkbox"/>
DOCUMENT_VISTA	<input type="checkbox"/>
TEST_VISTA	<input type="checkbox"/>

Press Configure to update and display new values in red, then press Generate to generate selected build files.

Current Generator: Borland Makefiles

```
specific short-term circumstances. Projects should be ported to the new  
behavior and not rely on setting a policy to OLD.
```

Configuring done

```
4191 [TfrmSignon]
4192 Caption=Vista Sign-on
4193 Panel7.Label3.Caption=Server:
4194 Panel7.Label4.Caption=Volume:
4195 Panel7.Label5.Caption=UCI:
4196 Panel7.Label6.Caption=Port:
4197 Panel7.Panel8.Label1.Caption=Access Code:
4198 Panel7.Panel8.Label2.Caption=Verify Code:
4199 Panel7.Panel8.btnOk.Caption=&OK
4200 Panel7.Panel8.btnCancel.Caption=&Cancel
4201 Panel7.Panel8.cbxChangeVerifyCode.Caption=Change Verify Code
4202 RpcbiBroker.Server=BROKERSERVER
```

```
4191 [TfrmSignon]
4192 Caption=Vista 서명하다
4193 Panel7.Label3.Caption=섬기는 사람:
4194 Panel7.Label4.Caption=음량:
4195 Panel7.Label5.Caption=UCI:
4196 Panel7.Label6.Caption=포트:
4197 Panel7.Panel8.Label1.Caption=액세스 코드:
4198 Panel7.Panel8.Label2.Caption=코드 확인:
4199 Panel7.Panel8.btnOk.Caption=승인 (&O)
4200 Panel7.Panel8.btnCancel.Caption=취소 (&C)
4201 Panel7.Panel8.cbxChangeVerifyCode.Caption=확인 코드 변경
4202 RpcbiBroker.Server=BROKERSERVER
```

# Result

VistA 서명하다

Cartoon VistA 시스템에 오신 것을 환영합니다.

<https://github.com/OSEHRA-Sandbox/Vista/>

사용자 자격 증명 :

SM1234 SM1234!! 123456

UTF-8 encoded sample plain-text file


Markus Kuhn [ˈmaʁkus ku:n] <mkuhn@acm.org> - 1999-08-20

The ASCII compatible UTF-8 encoding of ISO 10646 and Unicode plain-text files is defined in RFC 2279 and in ISO 10646-1 Annex R.

Using Unicode/UTF-8, you can write in emails and source code things such as

Mathematics and Sciences:

$$\int E da = Q, \quad n \rightarrow \infty, \quad \sum f(i) = \prod g(i), \quad \otimes x \otimes = -\otimes x \otimes, \quad \alpha \otimes -\beta = -(-\alpha \otimes),$$



액세스 코드:

코드 확인:

확인 코드 변경

섬기는 사hp    음량: ROU    UCI: VAH    포트: 9000

# Resource Strings

- **The way to localize embedded strings in CPRS**
- **Steps**
  - Modify CPRS source code to convert the embedded strings to resource strings
  - Compile
  - Run kdlscan.exe on CPRSChart.exe
  - Copy CPRSChart.lng to Translations folder
  - Run lngupdate.exe to update the translated file
  - Update the translation in a text editor
  - Copy back to CPRS runtime folder (or use Cmake)



# Cover sheet: fFrame.pas

```
CLIENTEVER; SERVEREVER; SERVERK...
+
+resourcestring
+ RS_PROBLEMS = 'Problems';
+ RS_MEDS = 'Meds';
+ RS_ORDERS = 'Orders';
+ RS_NOTES = 'Notes';
+ RS_CONSULTS = 'Consults';
+ RS_SURGERY = 'Surgery';
+ RS_DCSUMM = 'D/C Summ';
+ RS_LABS = 'Labs';
+ RS_REPORTS = 'Reports';
+ RS_COVER = 'Cover Sheet';
+
```

```
- CreateTab(CT_PROBLEMS, 'Problems');
- CreateTab(CT_MEDS, 'Meds');
- CreateTab(CT_ORDERS, 'Orders');
- CreateTab(CT_NOTES, 'Notes');
- CreateTab(CT_CONSULTS, 'Consults');
- if ShowSurgeryTab then CreateTab(CT_SURGERY, 'Surgery');
- CreateTab(CT_DCSUMM, 'D/C Summ');
- CreateTab(CT_LABS, 'Labs');
- CreateTab(CT_REPORTS, 'Reports');
- CreateTab(CT_COVER, 'Cover Sheet');
+ CreateTab(CT_PROBLEMS, RS_PROBLEMS);
+ CreateTab(CT_MEDS, RS_MEDS);
+ CreateTab(CT_ORDERS, RS_ORDERS);
+ CreateTab(CT_NOTES, RS_NOTES);
+ CreateTab(CT_CONSULTS, RS_CONSULTS);
+ if ShowSurgeryTab then CreateTab(CT_SURGERY, RS_SURGERY);
+ CreateTab(CT_DCSUMM, RS_DCSUMM);
+ CreateTab(CT_LABS, RS_LABS);
+ CreateTab(CT_REPORTS, RS_REPORTS);
+ CreateTab(CT_COVER, RS_COVER);
```

# kdlsca

```
kdlsca.exe "..\..\..\..\..\..\..\build\CPRS\CPRS-Chart\CPRSChart.exe"
```

K.D.L. Scanner 4.1: gets localizable strings from EXE, BPL, DLL and DRC files

```
=====  
=====
```

Old language file was found. SVCS activated...

```
Language file "..\..\..\..\..\..\..\build\CPRS\CPRS-Chart\CPRSChart.lng" created.
```

# Ingupdate

---

```
cd ..\Translations\kryvich  
copy  
..\..\..\..\..\..\..\build\CPRS\CPRS-  
Chart\CPRSChart.lng .  
..\..\Translation-  
Frameworks\kryvich\Ingupdate.exe  
CPRSChart.ko.lng CPRSChart.lng
```

# Translate

## [ResourceStrings]

```
+65056_fFrame_RS_COVER=Cover Sheet  
+65079_fFrame_RS_PROBLEMS=Problems  
+65080_fFrame_RS_MEDS=Meds  
+65081_fFrame_RS_ORDERS=Orders  
+65082_fFrame_RS_NOTES=Notes  
+65083_fFrame_RS_CONSULTS=Consults  
+65084_fFrame_RS_SURGERY=Surgery  
+65085_fFrame_RS_DCSUMM=D/C Summ  
+65086_fFrame_RS_LABS=Labs  
+65087_fFrame_RS_REPORTS=Reports
```

## [ResourceStrings]

```
+65056_fFrame_RS_COVER=표지  
+65079_fFrame_RS_PROBLEMS=진단  
+65080_fFrame_RS_MEDS=의약품  
+65081_fFrame_RS_ORDERS=명령  
+65082_fFrame_RS_NOTES=음표  
+65083_fFrame_RS_CONSULTS=문의  
+65084_fFrame_RS_SURGERY=외과  
+65085_fFrame_RS_DCSUMM=방전 요약  
+65086_fFrame_RS_LABS=실험실  
+65087_fFrame_RS_REPORTS=보고서
```

# Result

Vista CPRS in use by: 사용자,하나 (localhost)

File Edit View Tools Help

마우스,마키 (OUTPATIENT)  
505-11-1155P Nov 11,1955 (62)

Visit Not Selected  
Provider: 사용자,하나

No PACT ass

Flag

VistaWeb

Remote Data

Postings

D

활성 문제

Allergic Rhinitis (SCT 61582004)

알레르기 / 부작용

No Known Allergies

환자 게시

Advance Directive	Sep 04,2018
Advance Directive	Aug 21,2018
Advance Directive	Aug 06,2018

활성 약물

No Active Medications Found

임상 알림

ZZ Digital Rectal (Prostate) Exam	DUE NOW
ZZ Flexisigmoidoscopy	DUE NOW
ZZ Tobacco Cessation Education	DUE NOW
ZZ Advanced Directives Education	DUE NOW

마감일

최근 실험실 결과

Hemoglobin A1c Blood Sp Lb #4

생식기

No data found

예약 / 방문 / 입학

May 21,2018 08:53 Inpatient Stay