

DigitalPersona, Inc.

Upgrading Platinum® SDK Applications to One Touch® for Windows® SDK

VB 6.0 Edition

Version 1.6.1

Developer Guide



DigitalPersona, Inc.

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Should you have any questions concerning this document, or if you need to contact DigitalPersona for any other reason, write to:

DigitalPersona, Inc.
720 Bay Road
Suite 100
Redwood City, CA 94063
USA

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The purpose of this document is to support programmers during their conversion from using the Platinum SDK to the new One Touch for Windows ("OTW") SDK. It is intended to bridge the gap between the two API's and to act as an accompaniment to the OTW SDK guide and sample code that are included with the OTW SDK. Only the most used API calls are included in this document.

This document includes basic upgrade steps to convert your application to OTW. To help get you started, there is an example of the new approach in which to subscribe to fingerprint reader events. The document also contains a comparison of Platinum code snippets for each component area (i.e., capture, enrollment, verification) with a similar OTW code snippet. Also included is a code snippet of how to convert a Platinum fingerprint template to an OTW fingerprint template. A mapping between new and old fingerprint index enumerations is given to emphasize the importance of converting these indexes.

More information on converting from the Platinum SDK to OTW may be found on the Developer's Forum [here](#), including samples of how to convert to your templates to OTW.

If you are having trouble upgrading to OTW, or if you have any questions, comments, and concerns, please email TechSupport@DigitalPersona.com.

We at DigitalPersona extend our appreciation for your business.

Upgrades vary, but usually consist of four steps:

- [Application Code Upgrade](#)
- [Database Create script Upgrade](#)
- [Server Upgrade](#)
- [Client Upgrades](#)

The simplest case is outlined below. We recommend running through these steps in a test environment before applying them to production. If you think you have a more complex case, feel free to contact [Technical Support](#).

Application Code Upgrade

Here are a few steps to get you started on upgrading to the new OTW API:

- Step 1:** Install the One Touch for Windows SDK.
- Step 2:** Open up your development environment.
- Step 3:** Reference the OTW .dll's.
- Step 4:** Add the DPFPCapture object like in [Section 3: Event Subscription](#).
- Step 5:** In the form's constructor, instantiate the DPFPCapture object, then call StartCapture. On close of the form, call StopCapture.
- Step 6:** Implement the OnReaderConnect and OnComplete events.
- Step 7:** Try running the application and see whether or not you can capture a fingerprint.

Now, move on to the remainder of the application upgrade. Use all of [Section 3](#) as a guide, along with samples included in the install directory of your OTW SDK. The [Developer's Forum](#) is another place to find samples and get help.

Database Create Script Upgrade

Write and test code that creates OTW fingerprint templates from your stored Platinum fingerprint templates:

- Step 1:** Add a column to the table where you store your Platinum fingerprint templates. Reference the OTW .dll's.
- Step 2:** Write code to loop through your whole database of fingerprint templates. For each record, use the code snippet in [Section 3: Platinum SDK Enrollment Template Conversion for VB 6.0](#) to populate the new column.

Server Upgrade

Step 1: Run your code to add and populate a new OTW fingerprint template column in your database.

Step 2: Uninstall Platinum SDK. Here is a DOS command to uninstall Platinum SDK from the command prompt:

For Platinum RTE version 3.3, use "MsiExec.exe /I{F128D85D-CF8C-4CAB-AB9C-1AB46FC375E0}"

For Platinum SDK version 3.3, use "MsiExec.exe /I{56E83CB8-0A98-4490-84EE-3B4C763718FF}"

For Platinum RTE version 3.2, use "MsiExec.exe /I{B9E1F148-DCB6-4B18-9AB0-6E855ED809D1}"

For Platinum SDK version 3.2, use "MsiExec.exe /I{B4B57F62-5D1C-4F56-96E1-CF3254AC66D8}"

For Platinum RTE version 3.1.1, use "MsiExec.exe /I{1F784E7B-2E83-4A48-B34E-335818AFBC50}"

For Platinum SDK version 3.1.1, use "MsiExec.exe /I{153AC300-ACCF-4C04-B1C0-ECD12FB7C426}"

For additional versions, please call, or search the registry for the product name that is shown in your add/remove programs until you find an entry underneath the following key:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData.

Within the same InstallProperties key is a value string named UninstallString which contains what is required to uninstall your Platinum installation.

[Here](#) is more information on the MSiExec.exe's command-line options.

Step 3: Install One Touch for Windows RTE. OTW may be installed in silent mode if you do not wish to restart.

Step 4: Install your application.

Client Upgrade

Step 1: Uninstall Platinum RTE.

Step 2: Install One Touch for Windows RTE.

Step 3: Install your application.

Event Subscription

Use Code Sample 1 in applications developed in Microsoft VB 6.0 to handle [DPFPCapture](#) events. Event handling for [DPFPErollmentControl](#) and [DPFPVerificationControl](#) is also available using the same VB 6.0 event handling paradigm.

Code Sample 1. Handle capture events in VB 6.0:

```
Dim WithEvents Capture As DPFPCapture

Private Sub Form_Load()
    ' Create capture operation.
    Set Capture = New DPFPCapture

    ' Start capture operation.
    Capture.Priority = CapturePriorityLow
    Capture.StartCapture
End Sub

Private Sub Capture_OnReaderConnect(ByVal ReaderSerNum As String)
End Sub

Private Sub Capture_OnReaderDisconnect(ByVal ReaderSerNum As String)
End Sub

Private Sub Capture_OnFingerTouch(ByVal ReaderSerNum As String)
End Sub

Private Sub Capture_OnFingerGone(ByVal ReaderSerNum As String)
End Sub

Private Sub Capture_OnSampleQuality(ByVal ReaderSerNum As String, ByVal Feedback As DPFPCaptureFeedbackEnum)
End Sub

Private Sub Capture_OnComplete(ByVal ReaderSerNum As String, ByVal Sample As Object)
End Sub

End Class
```

Sample Conversion

Use [DPFPSampleConversion.ConvertToPicture\(Sample\)](#) to return a Bitmap.

Supported Platinum SDK Libraries and Components

FPDevices

OTW SDK Equivalent

[DPFPReadersCollection](#)

Public Members

Platinum SDK	
Count	
OTW SDK Equivalent	
Count	
Item	
OTW SDK Equivalent	
Item	
DeviceConnected(), DevDisconnected()	
OTW SDK Equivalent	
See Event Subscription section	

FPDevice

OTW SDK Equivalent

[DPFPReaderDescription](#)

Public Members

Platinum SDK	
Language	
OTW SDK Equivalent	
Language	

Vendor

OTW SDK Equivalent

Vendor

Product

OTW SDK Equivalent

Product

SerialNumber

OTW SDK Equivalent

SerialNumber

HWRevision

OTW SDK Equivalent

HardwareRevision

FWRevision

OTW SDK Equivalent

FirmwareRevision

Type

OTW SDK Equivalent

SerialNumberType

ImageType

OTW SDK Equivalent

ImpressionType

FingerTouching(), FingerLeaving(), SampleAcquired()

OTW SDK Equivalent

See Event Subscription section

Error([in] AIErrors errcode)

OTW SDK Equivalent

VB 6.0's [Err](#) object contains error information. Use [On Error Go To](#) to catch errors.

FPSample

OTW SDK Equivalent

[DPFPSample](#)

Public Members

Platinum SDK

Export([out] VARIANT* pVal, [out, retval] AIErrors *pErr)

OTW SDK Equivalent

Serialize()

Import([in] VARIANT Val, [out, retval] AIErrors *pErr)

OTW SDK Equivalent

Deserialize(byte[] Template)

Width, Height, PictureWidth, PictureHeight, Picture

OTW SDK Equivalent

Use [DPFPSampleConversion.ConvertToPicture\(Sample\)](#) to return a Bitmap.

FPTemplate

OTW SDK Equivalent

[DPFPTemplate](#), [DPFPFeatureSet](#)

Use [DPFP.Template](#) if `.TemplType` is `Tt_PreRegistration`.

Use [DPFP.FeatureSet](#) if `.TemplType` is `Tt_Verification`.

Public Members

Platinum SDK

`Export([out] VARIANT* pVal, [out, retval] AIErrors *pErr)`

OTW SDK Equivalent

`Serialize()`

`Import([in] VARIANT Val, [out, retval] AIErrors *pErr)`

OTW SDK Equivalent

`Deserialize(byte[] Template)`

FPFtrEx

OTW SDK Equivalent

[DPFPExtraction](#)

Public Members

Platinum SDK

`Process([in]IDispatch *pSample, [in] AITemplateTypes TemplType, [out] IDispatch **ppTemplate, [out] AISampleQuality **pQuality, [out, retval] AIErrors** pErr)`

OTW SDK Equivalent

`CaptureFeedback = CreateFeatureSet(Sample, DataPurpose)`. Use the `FeatureSet` property to retrieve the `FeatureSet` object.

FPRegister

OTW SDK Equivalent

Public Members

Platinum SDK

NewRegistration([in] AIRegTargets Target, [out,retval] AIErrors *pErr)

OTW SDK Equivalent

Instantiate a new [DPFPErollment](#) object, or use Clear() if the object is already instantiated.

Add([in] IDispatch *pPreReg, [out] VARIANT_BOOL *pbDone, [out,retval] AIErrors *pErr)

OTW SDK Equivalent

AddFeatures(FeatureSet)

Note: Use the FeaturesNeeded and TemplateStatus properties instead of the pbDone and pErr out parameters.

RegistrationTemplate

OTW SDK Equivalent

Template

FPVerify

OTW SDK Equivalent

[DPFPVerification](#)

Public Members

Platinum SDK

Compare([in] IDispatch *pTemplate, [in] IDispatch *pVerTemplate, [out] VARIANT_BOOL *pVerifyOk, [out] VARIANT *pScore, [out] VARIANT *pThreshold, [out] VARIANT_BOOL *pLearnDone, [out] IsecureModeMask *pSecurity, [out, retval] AIErrors *pErr)

OTW SDK Equivalent

Result = Verify(FeatureSet, Template)

SecurityLevel

OTW SDK Equivalent

FARRequested

FPGetSample, FPGetSampleX

OTW SDK Equivalent

[DPFPCapture](#)

Public Members

Platinum SDK

CreateOp([out,retval] AIErrors *pErr), Run([out,retval] AIErrors *pErr)

OTW SDK Equivalent

StartCapture()

Cancel([out,retval] AIErrors *pErr)

OTW SDK Equivalent

StopCapture()

SetDevicePriority([in] AIDevPriorities Priority, [in] LONG
hWnd, [out,retval] AIErrors *pErr), SelectDevice([in] BSTR serNum, [out,retval] AIErrors
*pErr)

OTW SDK Equivalent

Priority

Done([in] IDispatch *pTemplate), DevDisconnected(), DeviceConnected()

OTW SDK Equivalent

See Event Subscription section

Error([in] AIErrors errcode)

OTW SDK Equivalent

VB 6.0's [Err](#) object contains error information. Use [On Error Go To](#) to catch errors.

FPGetTemplate

See [FPRegisterTemplate](#), [FPVerifyTemplate](#)

FPGetTemplateX

See [FPRegisterTemplateX](#), [FPVerifyTemplateX](#)

FPRegisterTemplate, FPRegisterTemplateX

OTW SDK Equivalent

[DPFPEnrollment](#), [DPFPEnrollmentControl](#)

Public Members

Platinum SDK

CreateOp([out,retval] AIErrors *pErr), Run([out,retval] AIErrors *pErr), Cancel([out,retval] AIErrors *pErr), SetDevicePriority([in] AIDevPriorities Priority, [in] LONG hWnd, [out,retval] AIErrors *pErr), SelectDevice([in] BSTR serNum, [out,retval] AIErrors *pErr)

OTW SDK Equivalent

See [DPFPCapture](#)

Done([in] IDispatch *pTemplate), DevDisconnected(), DeviceConnected(), SampleReady(), SampleQuality()

OTW SDK Equivalent

See Event Subscription section

Error([in] AIErrors errcode)

OTW SDK Equivalent

VB 6.0's [Err](#) object contains error information. Use [On Error Go To](#) to catch error

FPVerifyTemplate, FPVerifyTemplateX

OTW SDK Equivalent

[DPFPVerification](#), [DPFPVerificationControl](#)

Public Members

Platinum SDK

CreateOp([out,retval] AIErrors *pErr), Run([out,retval] AIErrors *pErr), Cancel([out,retval] AIErrors *pErr), SetDevicePriority([in] AIDevPriorities Priority, [in] LONG hWnd, [out,retval] AIErrors *pErr), SelectDevice([in] BSTR serNum, [out,retval] AIErrors *pErr)

OTW SDK Equivalent

See [DPFPCapture](#)

SecurityLevel

OTW SDK Equivalent

FARRequested

Done([in] IDispatch *pTemplate), DevDisconnected(), DeviceConnected(), SampleReady(), SampleQuality()

OTW SDK Equivalent

See Event Subscription section

Error([in] AIErrors errcode)

OTW SDK Equivalent

VB 6.0's [Err](#) object contains error information. Use [On Error Go To](#) to catch errors.

SDK Sample Code Comparison

This section illustrates how capture, enrollment and verifications functions are performed in both Platinum and OTW. Sample code using the Platinum SDK is displayed to the left, and sample code using OTW SDK is displayed to the right.

Capture

Platinum SDK	OTW SDK Equivalent
<pre>Dim WithEvents op As FPGetSample Private Sub Form_Load() Set op = New FPGetSample End Sub Private Sub cmdRun_Click() op.Run lblMessages.Caption = "Put your finger on the sensor" picSample.Picture = Nothing lblSampleID.Caption = "" lblEvents.Caption = "" End Sub Private Sub cmdCancel_Click() op.Cancel lblMessages.Caption = "Operation canceled" Set op = Nothing End Sub Private Sub op_Done(ByVal pSample As Object) lblEvents.Caption = "Done" lblSampleID.Caption = pSample.InstanceID pSample.PictureOrientation = Or_Portrait pSample.PictureWidth = picSample.Width / Screen.TwipsPerPixelX pSample.PictureHeight = picSample.Height / Screen.TwipsPerPixelY picSample.Picture = pSample.Picture End Sub</pre>	<pre>Dim WithEvents Capture As DPFPCapture Private Sub Form_Load() ' Create capture operation. Set Capture = New DPFPCapture ' Start capture operation. Capture.Priority = CapturePriorityLow Capture.StartCapture End Sub Private Sub Capture_OnReaderConnect(ByVal ReaderSerNum As String) End Sub Private Sub Capture_OnReaderDisconnect(ByVal ReaderSerNum As String) End Sub Private Sub Capture_OnFingerTouch(ByVal ReaderSerNum As String) End Sub Private Sub Capture_OnFingerGone(ByVal ReaderSerNum As String) End Sub Private Sub Capture_OnSampleQuality(ByVal ReaderSerNum As String, ByVal Feedback As DPFPCaptureFeedbackEnum) End Sub Private Sub Capture_OnComplete(ByVal ReaderSerNum As String, ByVal Sample As Object) End Sub Private Sub Close_Click() ' Stop capture operation. This code is optional. Capture.StopCapture ' Unload form. Unload Me End Sub</pre>



Enrollment

Platinum SDK

```
Dim WithEvents op As FPRRegisterTemplate
Dim regtemplate As FPTemplate

Private Sub Form_Load()
    cursample = 0
    Set op = New FPRRegisterTemplate
End Sub

Private Sub cmdRun_Click()
    Dim i As Integer

    cursample = 0
    For i = 0 To 3
        picSample(i).Picture = Nothing
        dot(i).Visible = False
    Next i
    dot(cursample).Visible = True

    op.Run
    lblMessages.Caption = "Put your finger on the sensor"
    lblQuality.Caption = ""
    lblTemplateID.Caption = ""
    lblEvents.Caption = ""
End Sub

Private Sub op_Done(ByVal pTemplate As Object)
    lblEvents.Caption = "Done"
    lblTemplateID.Caption = pTemplate.InstanceID
    Set regtemplate = pTemplate
End Sub
```

OTW SDK Equivalent

```
Dim WithEvents Capture As DPFPCapture
Dim CreateFtrs As DPFPPFeatureExtraction
Dim CreateTempl As DPFPErollment
Dim ConvertSample As DPFPSampleConversion

Private Sub Form_Load()
    ' Create capture operation.
    Set Capture = New DPFPCapture
    ' Start capture operation.
    Capture.StartCapture

    Set CreateFtrs = New DPFPPFeatureExtraction
    Set CreateTempl = New DPFPErollment
    Samples.Caption = CreateTempl.FeaturesNeeded
    Set ConvertSample = New DPFPSampleConversion
End Sub

Private Sub Capture_OnComplete(ByVal ReaderSerNum As String, ByVal
Sample As Object)
    Dim Feedback As DPFPCaptureFeedbackEnum

    ' Process sample and create feature set for purpose of enrollment.
    Feedback = CreateFtrs.CreateFeatureSet(Sample, DataPurposeEnrollment)
    ' Quality of sample is not good enough to produce feature set.
    If Feedback = CaptureFeedbackGood Then
        ' Add feature set to template.
        CreateTempl.AddFeatures CreateFtrs.FeatureSet
        ' Show number of samples needed to complete template.
        Samples.Caption = CreateTempl.FeaturesNeeded
        ' Check if template has been created.
        If CreateTempl.TemplateStatus = TemplateStatusTemplateReady Then
            MainForm.SetTemplate CreateTempl.Template
            ' Template has been created, so stop capturing samples.
            Capture.StopCapture
        End If
    End If
End Sub
```

Verification

Platinum SDK

```
Dim WithEvents op As FPVerifyTemplate
Attribute op.VB_VarHelpID = -1
Dim regtemplate As FPTemplate

Private Sub cmdLoad_Click()
    Dim res As AIErrors
    On Error GoTo noload
    Dim blob() As Byte

    Set regtemplate = New FPTemplate

    Open "c:\regtemplate.fpt" For Binary As #1
    ReDim blob(LOF(1))
    Get #1, , blob()
    Close #1

    res = regtemplate.Import(blob)
    Exit Sub

noload:
    MsgBox "No registration template found"
End Sub

Private Sub cmdRun_Click()
    op.Run regtemplate
    lblMessages.Caption = "Put your finger on the sensor"
    picSample.Picture = Nothing
    lblQuality.Caption = ""
    lblTemplateID.Caption = ""
    lblEvents.Caption = ""
End Sub

Private Sub op_Done(ByVal VerifyOk As Boolean, pInfo() As Variant, ByVal
Val As DpSdkEngLib.AISecureModeMask)
    lblEvents.Caption = "Done"
    lblResult.Caption = Format(VerifyOk)
    lblScore.Caption = CStr(pInfo(0))
    lblThreshold.Caption = CStr(pInfo(1))
    lblLearning.Caption = Format(CBool(pInfo(2)))
End Sub
```

OTW SDK Equivalent

```
Dim WithEvents Capture As DPFPCapture
Dim CreateFtrs As DPFPPFeatureExtraction
Dim Verify As DPFPPVerification
Dim ConvertSample As DPFPSampleConversion

Private Sub Form_Load()
    ' Create capture operation.
    Set Capture = New DPFPCapture
    ' Start capture operation.
    Capture.StartCapture
    Set CreateFtrs = New DPFPPFeatureExtraction
    Set Verify = New DPFPPVerification
    Set ConvertSample = New DPFPSampleConversion
End Sub

Private Sub Capture_OnComplete(ByVal ReaderSerNum As String, ByVal Sample
As Object)
    Dim Feedback As DPFPCaptureFeedbackEnum
    Dim Res As DPFPPVerificationResult
    Dim Templ As Object
    ' Process sample and create feature set for purpose of verification.
    Feedback = CreateFtrs.CreateFeatureSet(Sample, DataPurposeVerification)
    ' Quality of sample is not good enough to produce feature set.
    If Feedback = CaptureFeedbackGood Then
        Prompt.Caption = "Touch the fingerprint reader with a different finger."
        Set Templ = MainFrame.GetTemplate
        If Templ Is Nothing Then
            MsgBox "You must create a fingerprint template before you can perform
verification."
        Else
            ' Compare feature set with template.
            Set Res = Verify.Verify(CreateFtrs.FeatureSet, Templ)
            ' Show results of comparison.
            FAR.Caption = Res.FARAchieved
            If Res.Verified = True Then ' fingerprint was verified.
            Else ' fingerprint was not verified.
            End If
        End If
    Else ' quality of feature set is poor.
    End If
End Sub
```

Platinum SDK Enrollment Template Conversion for VB 6.0

Use Code Sample 2 in applications developed in Microsoft C# to convert Platinum SDK enrollment templates.

Code Sample 2. Platinum SDK Template Conversion for VB 6.0:

```
Public Function PlatinumToGold(platinumTemplate As Variant) As
Byte()
Dim pTemplate As New FPTemplate
Dim vGold As Variant
Dim bGold() As Byte
Dim er As DpSdkEngLib.AIErrors
er = pTemplate.Import(platinumTemplate)
If er <> Er_OK Then PlatinumToGold = "": Exit Function
vGold = pTemplate.TemplData
bGold = vGold
PlatinumToGold = bGold
End Function
```

Data Type Conversion

AlFinger

Platinum SDK	OTW SDK Equivalent
Fn_LeftPinkie = 0	10 = Left little finger
Fn_LeftRing = 1	9 = Left ring finger
Fn_LeftMiddle = 2	8 = Left middle finger
Fn_LeftIndex = 3	7 = Left index finger
Fn_LeftThumb = 4	6 = Left thumb
Fn_RightThumb = 5	1 = Right thumb
Fn_RightIndex = 6	2 = Right index finger
Fn_RightMiddle = 7	3 = Right middle finger
Fn_RightRing = 8	4 = Right ring finger
Fn_RightPinkie = 9	5 = Right little finger

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