

DigitalPersona, Inc.

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

VB.NET 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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Table of Contents

Introduction.....	4
Upgrading SDK Objects.....	5
Event Subscription.....	5
Sample Conversion.....	5
Supported Platinum SDK Libraries and Components.....	6
FPDevices.....	6
FPDevice.....	6
FPSample.....	8
FPTemplate.....	8
FPFtrEx.....	9
FPRegister.....	9
FPVerify.....	10
FPGetSample, FPGetSampleX.....	11
FPGetTemplate.....	11
FPGetTemplateX.....	12
FPRegisterTemplate, FPRegisterTemplateX.....	12
FPVerifyTemplate, FPVerifyTemplateX.....	13
SDK Sample Code Comparison.....	14
Capture.....	14
Enrollment.....	15
Verification.....	17
Platinum SDK Enrollment Template Conversion for VB.NET.....	18
Data Type Conversion.....	18
AIFinger.....	18

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 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.

For questions, comments, and concerns, please email TechSupport@DigitalPersona.com. We at DigitalPersona extend our appreciation for your business.

Event Subscription

Use Code Sample 1 in applications developed in Microsoft VB.NET to handle `DPFP.Capture.Capture` events. Event handling for `DPFP.Gui.Enrollment` and `DPFP.Gui.Verification` is also achieved using inheritance of those classes.

Code Sample 1. Handle capture events in VB.NET:

```
' NOTE: This form is a base for the EnrollmentForm and the VerificationForm.
All changes in the CaptureForm will be reflected in all its derived forms.
'
Public Class CaptureForm
    Inherits DPFP.Capture.EventHandler
    ' Prepare to capture.
    Public Sub CaptureForm()

        ' Create a capture operation.
        Capturer = New DPFP.Capture.Capture()

        ' Subscribe for capturing events.
        Capturer.EventHandler = Me

        ' Start capture.
        Capturer.StartCapture()
    End Sub
    Public Sub OnComplete(ByVal Capture As Object, ByVal SerNum As String,
ByVal Sample As DPFP.Sample)
    End Sub
    Public Sub OnFingerGone(ByVal Capture As Object, ByVal SerNum As String)
    End Sub
    Public Sub OnFingerTouch(ByVal Capture As Object, ByVal SerNum As
String)
    End Sub
    Public Sub OnReaderConnect(ByVal Capture As Object, ByVal SerNum As
String)
    End Sub
    Public Sub OnReaderDisconnect(ByVal Capture As Object, ByVal SerNum As
String)
    End Sub
    Public Sub OnSampleQuality(ByVal Capture As Object, ByVal SerNum As
String, ByVal CaptureFeedback As DPFP.Capture.CaptureFeedback)
    End Sub
End Class
```

Sample Conversion

Use `DPFP.Capture.SampleConversion.ConvertToPicture(Sample, ref Bitmap)` to return a `Bitmap`.

Supported Platinum SDK Libraries and Components

FPDevices

OTW SDK Equivalent

DPPF.Capture.[ReadersCollection](#)

Public Members

Platinum SDK

Count

OTW SDK Equivalent

Count

Item

OTW SDK Equivalent

Item

DeviceConnected(), DevDisconnected()

OTW SDK Equivalent

See DPPF.Capture.[EventHandler](#)

FPDevice

OTW SDK Equivalent

DPPF.Capture.[ReaderDescription](#)

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 [DPFP.Capture.EventHandler](#)

Error([in] AIErrors errcode)

OTW SDK Equivalent

See [DPFP.Error.SDKException](#)

FPSample

OTW SDK Equivalent

DPFP.[Sample](#)

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 DPFP.Capture.[SampleConversion.ConvertToPicture](#)(Sample, ref Bitmap) to create a Bitmap.

FPTemplate

OTW SDK Equivalent

DPFP.[Template](#), DPFP.[FeatureSet](#)

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)

TemplData

OTW SDK Equivalent

Bytes

FPFtrEx

OTW SDK Equivalent

DPFP.Processing.[FeatureExtraction](#)

Public Members

Platinum SDK

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

OTW SDK Equivalent

CreateFeatureSet(Sample, DataPurpose, ref CaptureFeedback, ref FeatureSet)

FPRegister

OTW SDK Equivalent

DPFP.Processing.[Enrollment](#)

Public Members

Platinum SDK

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

OTW SDK Equivalent

Instantiate a new DPFP.Processing.[Enrollment](#) 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 pDone and pErr out parameters.

RegistrationTemplate

OTW SDK Equivalent

Template

FPVerify

OTW SDK Equivalent

DPPFP.Verification

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

Verify(FeatureSet, Template, ref Result)

SecurityLevel

OTW SDK Equivalent

FARRequested

FPGetSample, FPGetSampleX

OTW SDK Equivalent

DPPF.Capture.[Capture](#)

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 DPPF.Capture.[EventHandler](#)

Error([in] AIErrors errcode)

OTW SDK Equivalent

See DPPF.Error.[SDKException](#)

FPGetTemplate

See FPPRegisterTemplate, FPVerifyTemplate

FPGetTemplateX

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

FPRegisterTemplate, FPRegisterTemplateX

OTW SDK Equivalent

[DPFP.Enrollment](#), [DPFP.Gui.Enrollment](#)

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 [DPFP.Capture.Capture](#)

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

OTW SDK Equivalent

See [DPFP.Capture.EventHandler](#)

[Error](#)([in] AIErrors errcode)

OTW SDK Equivalent

See [DPFP.Error.SDKException](#)

FPVerifyTemplate, FPVerifyTemplateX

OTW SDK Equivalent

[DPFP.Verification](#), [DPFP.Gui.Verification](#)

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 [DPFP.Capture.Capture](#)

SecurityLevel

OTW SDK Equivalent

FARRequested

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

OTW SDK Equivalent

See [DPFP.Capture.EventHandler](#), [DPFP.Gui.Verification.EventHandler](#)

Error([in] AIErrors errcode)

OTW SDK Equivalent

See [DPFP.Error.SDKException](#)

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>Private rgs As New DPSDKOPSLib.FPRegisterTemplateClass() Private Sub cmd_begin_Click(ByVal sender As Object, ByVal e As System.EventArgs) rgs.Done += New DPSDKOPSLib._IFPRegisterTemplateEvents_DoneEventHandler(AddressOf Done) rgs.Run(1) End Sub Private Sub cmd_exit_Click(ByVal sender As Object, ByVal e As System.EventArgs) rgs.Cancel() Application.[Exit]() End Sub Private Sub Done(ByVal obj As Object) Dim tmplate As DpSdkEngLib.FPTemplate = DirectCast(obj, DpSdkEngLib.FPTemplate) tmplate.Export(pRegTmplate) End Sub</pre>	<pre>Public Partial Class CaptureForm Inherits Form Inherits DPFPP.Capture.EventHandler Private Sub CaptureForm_Load(sender As Object, e As EventArgs) Capturer = New DPFPP.Capture.Capture() ' Create a capture operation. Capturer.EventHandler = Me ' Subscribe for capturing events. Capturer.StartCapture() End Sub Private Sub CaptureForm_FormClosed(sender As Object, e As FormClosedEventArgs) Capturer.StopCapture() End Sub Public Sub OnComplete(Capture As Object, ReaderSerialNumber As String, Sample As DPFPP.Sample) Process(Sample) End Sub End Class</pre>

Enrollment

Platinum SDK

```
Private rgs As New DPSDKOPSLib.FPRegisterTemplateClass()

Private Sub cmd_begin_Click(sender As Object, e As System.EventArgs)
    rgs.Done += New
DPSDKOPSLib._IFPRegisterTemplateEvents_DoneEventHandler(RegDone)
    cmd_begin.Enabled = False
    rgs.Run(1)
End Sub

Private Sub Done(obj As Object)
    Dim tmlate As DpSdkEngLib.FPTemplate = DirectCast(obj,
DpSdkEngLib.FPTemplate)
    tmlate.Export(pRegTmlate)
End Sub
```

OTW SDK Equivalent

```
Public Class EnrollmentForm
    Inherits CaptureForm
    Private Enroller As DPFP.Processing.Enrollment
    Public Delegate Sub OnTemplateEventHandler(template As DPFP.Template)
    Public Event OnTemplate As OnTemplateEventHandler

    Protected Overrides Sub Init()
        Enroller = New DPFP.Processing.Enrollment()
        ' Create an enrollment.
    End Sub

    Protected Function ExtractFeatures(Sample As DPFP.Sample, Purpose As
DPFP.Processing.DataPurpose) As DPFP.FeatureSet
        Dim Extractor As New DPFP.Processing.FeatureExtraction()
        ' Create a feature extractor
        Dim feedback As DPFP.Capture.CaptureFeedback =
DPFP.Capture.CaptureFeedback.None
        Dim features As New DPFP.FeatureSet()
        Extractor.CreateFeatureSet(Sample, Purpose, feedback, features)
        ' TODO: return features as a result?
        If feedback = DPFP.Capture.CaptureFeedback.Good Then
            Return features
        Else
            Return Nothing
        End If
    End Function

    Protected Overrides Sub Process(Sample As DPFP.Sample)
        ' Process the sample and create a feature set for the enrollment purpose.
        Dim features As DPFP.FeatureSet = ExtractFeatures(Sample,
DPFP.Processing.DataPurpose.Enrollment)

        ' Check quality of the sample and add to enroller if it's good
        If features IsNot Nothing Then
            Try
                MakeReport("The fingerprint feature set was created.")
                ' Add feature set to template.
                Enroller.AddFeatures(features)
            Finally
                ' Check if template has been created.
            End Try
        End If
    End Sub
End Class
```

```
Select Case Enroller.TemplateStatus
Case DFPF.Processing.Enrollment.Status.Ready
' report success and stop capturing
Capturer.StopCapture()
Exit Select

Case DFPF.Processing.Enrollment.Status.Failed
' report failure and restart capturing
Enroller.Clear()
Capturer.StopCapture()
Capturer.StartCapture()
Exit Select
End Select
End Try
End If
End Sub
End Class
```

Verification

Platinum SDK

```
Private verifyTemplate As New DPSDKOPSLib.FPGetTemplateClass()

Private Sub cmd_begin_Click(sender As Object, e As System.EventArgs)
    verifyTemplate.Done += New
    DPSDKOPSLib._IFPGetTemplateEvents_DoneEventHandler(VerifyDone)
    verifyTemplate.Run(0)
End Sub

Private Sub Done(vt As Object)
    Dim verifyOK As Boolean = False
    Dim score As Object = 0
    Dim threshold As Object = 0
    Dim tture As Boolean = True
    Dim verifyTemplate As DpSdkEngLib.FPTemplate = DirectCast(vt,
    DpSdkEngLib.FPTemplate)
    Dim RegTemplate As New DpSdkEngLib.FPTemplateClass()

    RegTemplate.Import(cpRegTmplate)
    Dim verify As New DpSdkEngLib.FPVerifyClass()
    verify.Compare(RegTemplate, verifyTemplate, verifyOK, score,
    threshold, tture, _
    sm)
    If verifyOK = True Then
        Me.helptext.Text = "Finger print matched!!"
    Else
        Me.helptext.Text = "Finger print did not match !!"
    End If
End Sub
```

OTW SDK Equivalent

```
Public Class VerificationForm
    Inherits CaptureForm
    Private Template As DPFP.Template
    Private Verificator As DPFP.Verification.Verification

    Protected Overrides Sub Init()
        ' Create a fingerprint template verifier
        Verificator = New DPFP.Verification.Verification()
    End Sub

    Protected Overrides Sub Process(Sample As DPFP.Sample)
        ' Process the sample and create a feature set for the enrollment
        purpose.
        Dim features As DPFP.FeatureSet = ExtractFeatures(Sample,
        DPFP.Processing.DataPurpose.Verification)

        ' Check quality of the sample and start verification if it's good
        If features IsNot Nothing Then
            ' Compare the feature set with our template
            Dim result As New DPFP.Verification.Verification.Result()
            Verificator.Verify(features, Template, result)
            If result.Verified Then
                MakeReport("The fingerprint was VERIFIED.")
            Else
                MakeReport("The fingerprint was NOT VERIFIED.")
            End If
        End If
    End Sub
End Class
```

Platinum SDK Enrollment Template Conversion for VB.NET

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

Code Sample 2. Platinum SDK Template Conversion for C#:

```
Public Function PlatinumToOTW(ByVal platinumTemplate As object) As Byte()  
    Dim pTemplate As New FPTemplate  
    Dim er As DpSdkEngLib.AIErrors  
    er = pTemplate.Import(platinumTemplate)  
    If er <> Er_OK Then PlatinumToOTW = "" : Exit Function  
    PlatinumToOTW = CType(pTemplate.TemplData, Byte())  
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

Index

AlFinger	18
Capture	14
Data Type Conversion	18
Enrollment.....	15
Event Subscription	5
Introduction	4
Platinum SDK Enrollment Template Conversion for C#	18
SDK Sample Code Comparison	14
Supported Libraries and Components	6
Upgrading SDK Objects	5
Verification	17