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Thank you for your continued support of Mitsubishi Integrated FA Software MELSOFT Series.

Using ACT controls provided by MX Component may cause problems due to the effect of Data Execution Prevention (DEP) in Windows XP (SP2 or later), Windows Vista and 32-bit/64-bit Windows 7. This bulletin explains the problems that may occur and the workaround for them.

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1. Data Execution Prevention (DEP)

Beginning with Windows XP SP2, Microsoft Corporation implements DEP for security enhancement. For details of DEP, refer to the following documents provided by Microsoft Corporation.

1) "How to Configure Memory Protection in Windows XP SP2" available at TechNet Security ThechCenter http://technet.microsoft.com/en-us/library/cc700810.aspx

- 2) Microsoft Help and Support Article ID: 875352
- http://support.microsoft.com/kb/875352/en-us
- (URLs as of April 28, 2010)

2. Symptoms

Point

This symptom occurs when MX Component Version 3 or earlier is used. To avoid the problems, follow the instructions below.

The effect of DEP may cause problems as the creation of a user application using an ACT control or the execution of them.

We have confirmed the occurrence of the following problems due to the effect of DEP.

Situation	No	Symptom	Description	Reference
Creation of a user application 1		An ACT control added on a form may not be displayed.	An ACT control may not be displayed if it is added on a form in a Visual Studio .NET project.	Section 5.1
	2	Adding an ACT control to a form ends Visual Studio in error.	When a Visual Studio .NET project is created and an ACT control is added to a form, Visual Studio ends in error.	Section 5.2
	3	The designer display may be failed.	An error may occur if a form on which an ACT control is added is opened in a Visual Studio .NET project.	Section 5.3
	4	Displaying a designer fails to display an ACT control.	If a form on which an ACT control is added is opened in a Visual Studio .NET project, the ACT control is not displayed.	Section 5.4
	5	Displaying a designer ends Visual Studio in error.	If a form on which an ACT control is added is opened in a Visual Studio .NET project, Visual Studio ends in error.	Section 5.5
	6	Testing a dialog box may end Visual Studio in error.	Adding an ACT control and testing a dialog box in an MFC project may end Visual Studio in error.	Section 5.6
Execution of a user application	7	Executing an MFC project program may cause an error.	An error may occur if an MFC project program including a form with an ACT control is created and executed.	Section 5.7

Table 2-1 Symptoms caused by the effect of DEP



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3. DEP Configurations that May Cause Problems

In the creation environment and execution environment of user applications, problems may occur due to the combination of the versions of the OS/Visual Studio being used and the DEP configurations. The following shows the combinations that may cause problems.

If your environment corresponds to any of the following combinations, make settings in accordance with the 'Flow chart for avoiding problems' (Refer to "Chapter 4 Configurations for Avoiding Problems due to the Effect of DEP").

Point In Windows XP, Windows Vista and 32-bit/64-bit Windows 7alike, the DEP configuration is "OptIn" by default. If the configuration is uncertain, confirm it. (For the method for confirming, refer to "Section 4.2 Confirming DEP Configuration".)

Creation environment of user applications
 The following shows the DEP configurations that may cause problems in the creation environment of user applications.

Creation environment		DEP configurations that may cause problems		
Windows Wisto	Visual Studio 2010	OntIn OntOut AlwaysOn		
32-bit/64-bit Windows 7	Visual Studio 2008	Optini, OptOut, Alwayson		
	Visual Studio 2005			
	Visual Studio 2010	AlwaysOn		
Windows XP	Visual Studio 2008	Alwayson		
	Visual Studio 2005			

Table 3-1 DEP configurations that may cause problems in creation environment

(2) Execution environment of user applications

Problem may occur depending on the execution environment when an MFC project user application is created with Visual Studio 2008 and Visual Studio 2010. (For distinguishing MFC projects, refer to "Chapter 6 Distinguishing Types of Projects".)

The following shows the DEP configurations that may cause problems in the execution environment of user applications.

Table 3-2 DEP configurations that may cause problems in execution environment

Execution environment	DEP configurations that may cause problems		
Windows Vista, 32-bit Windows 7	OptIn, OptOut, AlwaysOn		
Windows XP	AlwaysOn		



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4. Configurations for Avoiding Problems due to the Effect of DEP

4.1 Flow Chart for Avoiding Problems

Make settings in accordance with the following flow chart to avoid problems caused by the effect of DEP. (1) Creation environment of user applications



Figure 4-1 Flow chart for avoiding problems in the creation environment



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Figure 4-2 Flow chart for avoiding problems in the execution environment

- For distinguishing MFC projects, refer to "Chapter 6 Distinguishing Types of Projects".
- ···· Refer to "Section 4.2 Confirming DEP Configuration".
- •••• Refer to "Chapter 3 DEP Configurations that May Cause Problems".
- Refer to "Section 4.3 DEP Configuration" and "Section 4.4 Changing DEP Configuration".



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4.2 Confirming DEP Configuration

In Windows XP, Windows Vista and 32-bit/64-bit Windows 7 alike, the DEP configuration is "OptIn" by default. If the configuration is uncertain, confirm it in the following way.

- Windows Vista and 32-bit/64-bit Windows 7 Perform the following operations with administrator privileges.
 Select [Start]-[All Programs]-[Accessories].
 - 2) Right click on [Command Prompt] and select [Run as administrator].



3) Input the following command.

BCDEDIT

4) The current DEP configuration is shown on the line "nx" in the following screen.

identifier	{bootmgr}	
device	partition=C:	
description	Windows Boot Manager	
locale	en-US (wlabalaattigwa)	
default	(giuwent)	
displayorder	{current}	
toolsdisplayorder	{memdiag}	
timeout	30	
Windows Boot Loader		
identifier	{current}	
device	partition=C:	
path	\Windows\system32\winload.exe	
description	Microsoft Windows Vista	
10Cale	en-us {bootloadewsettings}	
osdevice	partition=C:	
systemroot	Windows	
heat heat	c1-a?c8-11dd-ae?1-df3?4d3?9591}	
nx	Optin	

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- (2) Windows XP
 - Perform the following operations with administrator privileges.
 - 1) Select [Start]-[Control Panel].
 - 2) Under "Pick a category", Select "Performance and Maintenance".
 - 3) Under "or Pick a Control Panel icon", select "System".
 - 4) In the <<Advanced>>> tab, select Settings button in the "Startup and Recovery" area.
 - 5) Select the Edit button in the "System startup" area.

Startup and Recovery	? 🛛				
- System startup					
Default operating system:					
"Microsoft Windows XP Professional" /fastdetect /NoExecute=Op					
Time to display list of operating systems:	30 😂 seconds				
Time to display recovery options when needed:	30 😂 seconds				
To edit the startup options file manually, dick Edit.	Edit				

6) Refer to the next line to [operating systems] in your boot.ini file.

👂 boot.ini - Notepad	
Eile Edit Format View Help	
<pre>[boot loader] timeout=30 default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS [operating systems] multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft Windows XP Professional" ,</pre>	/fastdetect /NoExecute=OptIn

*1: Might be different depending on the environment. Confirm the DEP configuration from the description of the line starting with "multi...". Refer to the following table.

Description of boot.ini	DEP configuration
Not including "/noexecute="	OptIn
"/noexecute=OptIn"	OptIn
"/noexecute=OptOut"	OptOut
"/noexecute=AlwaysOn"	AlwaysOn
"/noexecute=AlwaysOff"	AlwaysOff

Table 4.2-1 Descriptions of boot.ini and DEP configurations



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4.3 DEP Configuration

- The following shows the configurations for avoiding problems due to the effect of the DEP.
- (1) Creation environment of user applications
 - In the environment where user applications are created, configure DEP as follows.

Table 4.3-1 DEI	^o configurations	in the	creation	environment
-----------------	-----------------------------	--------	----------	-------------

Creation en	nvironment	DEP configuration
Windows Visto	Visual Studio 2010	AlwaysOff
Windows Vista, 32-hit/64-hit Windows 7	Visual Studio 2008	AlwaysOli
52 on of on which we	Visual Studio 2005	Other than AlwaysOn
	Visual Studio 2010	(When AlwaysOn:
Windows XP	Visual Studio 2008	Change to OptIn,
	M. 1.9. 1. 2005	When other than AlwaysOn:
	Visual Studio 2005	No change necessary)

(2) Execution environment of user applications

When user applications are created with MFC projects of Visual Studio 2008 and Visual Studio 2010, configure DEP in the execution environment as follows. Problems can be avoided by changing the DEP configuration and linker option (recreating programs).

(a) Possible to change the linker option and create user applications

Select "Image is not compatible with DEP (/NXCOMPAT:NO)" in [Linker]-[Advanced]-[Data Execution Prevention (DEP)] in the MFC project Property Pages, and create user applications. Configure DEP as follows.

Table 4.3-2 DEP	configuration	when the	linker o	option i	s changeab	le
	6				<u> </u>	

Execution environment	DEP configuration
Windows Vista,	Other than AlwaysOn
32-bit Windows 7	(When AlwaysOn:
	Change to OptIn,
Windows XP	When other than AlwaysOn:
	No change necessary)

(b) Impossible to change the linker option

When the linker option cannot be changed (when programs cannot be recreated), configure DEP to "AlwaysOFF".

Table 4.3-3 DEP configuration when the linker option is not changeable

Execution environment	DEP configuration
Windows Vista,	
32-bit Windows 7	AlwaysOff
Windows XP	



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4.4 Changing DEP Configuration

- (1) Windows Vista and 32-bit/64-bit Windows 7
 - Perform the following operations with administrator privileges.
 - 1) Select [Start]-[All Programs]-[Accessories].
 - 2) Right click on [Command Prompt] and select [Run as administrator].



3) Execute the following command.

Table 4.4-1 Command that should be executed	Table 4.4-1	Command	that should	be executed
---	-------------	---------	-------------	-------------

DEP to be configured	Command that should be executed
OptIn	BCDEDIT /SET nx OptIn
OptOut	BCDEDIT /SET nx OptOut
AlwaysOff	BCDEDIT /SET nx AlwaysOff

4) Restart the personal computer.



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- (2) Windows XP
 - 1) Select [Start]-[Control Panel].
 - 2) Under "Pick a category", Select "Performance and Maintenance".
 - 3) Under "or Pick a Control Panel icon", select "System".
 - 4) In the <<<<u>Advanced>> tab</u>, select <u>Settings</u> button in the "Startup and Recovery" area.
 - 5) Select the Edit button in the "System startup" area.

Startup and Recovery			?
System startup Default operating system:			
"Microsoft Windows XP Professional" /fastdetect /h	loExe	cute	=Op 🗸
☑ Time to display list of operating systems:	30		seconds
Time to display recovery options when needed:	30	*	seconds
To edit the startup options file manually, dick Edit.	C	E	dit

📕 boot.ini - Notepad	
Eile Edit Format View Help	
[boot loader] timeout=30 default=multi(0)disk(0)rdisk(0)partition(1)\WINDOWS [operating systems] multi(0)disk(0)rdisk(0)partition(1)\WINDOWS="Microsoft win	dows XP Professional" /fastdetect /NoExecute=OptIn

6) Edit the boot.ini file as follows.

*1: Might be different depending on the environment.

Table 4.4-2 Description of boot.ini and modification method

Description of boot.ini	Modification method
Not including "/noexecute="	Add the following description at the end of the line starting with
	"multi", which is the next to the line [operation systems].
	When changing to OptOut: "/noexecute=OptOut"
	When changing to AlwaysOff: "/noexecute=AlwaysOff"
Including "/noexecute="	Replace a description following "/noexecute=" to the DEP
	configuration to be.
	When changing to Optin: "/noexecute=OptIn"
	When changing to OptOut: "/noexecute=OptOut"
	When changing to AlwaysOff: "/noexecute=AlwaysOff"

Point

Be sure to edit the boot.ini carefully. The default configuration (OptIn) may be taken for incorrect settings. Changing settings not explained above may result in Windows XP not being able to start up.

- 7) In Notepad, select [File]-[Save].
- 8) Exit Notepad.
- 9) Click the OK button to close the Startup and Recovery dialog box.
- 10) Click the OK button to close the System Properties dialog box.
- 11) Restart the personal computer.

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4.5 Linker Option Setting

When creating an MFC project program with Visual Studio 2008 and Visual Studio 2010, build the program after making the following setting. (For distinguishing MFC projects, refer to "Chapter 6 Distinguishing Types of Projects".)

(1) Select "Image is not compatible with DEP (/NXCOMPAT:NO)" in [Linker]-[Advanced]-[Data Execution Prevention (DEP)] in the MFC project Property Pages.

<In case of Visual Studio 2008>

Configuration:	Active(Debug)		▼ Pla	tform:	Active(W	(in32)		•	Configuration Manage					
Common Pr	roperties		Entry Point							T				
Framework and Referen			No Entry Point		No		Ī							
Configuratio	on Properties		Set Checksum Base Address		No		1							
General														
Debuggi	ng		Randomized	Base Ad	ddress		Disable Imag	e Randomiza	tion (/DYNAMICBASE:N	С				
C/C++			Fixed Base A	ddress			Default							
Linker			Data Executi	on Preve	ention (DEF	?)	e is not comp	atible with I	DEP (/NXCOMPAT:NO)					
Gene	eral		Turn Off Ass	embly (Generation	Default				1				
Inpu	t Kant Film		Delay Loaded DLL		Image is not compatible with DEP (/NXCOMPAT:NO)		1							
Dobu	irest File	=	Import Libra	ry		Image	is compatible v	with DEP (/N)	(COMPAT)	٦				
Suste	Debugging		System	Sustem	Surtem	ustem M	Merge Section	ons		<inheri< td=""><td>it from parent of</td><td>or project def</td><td>aults></td><td></td></inheri<>	it from parent of	or project def	aults>	
Onti	mization	Tai		Target Mach	ine			MachineX86	(MACHINE:	X86)	1			
Emb	edded IDL		Profile				No							
Adva	Advanced		Advanced		CLR Thread	Attribut	e		No threading	attribute set				
Com	mand Line		CLR Image T	ype			Default image	e type						
Manifest	Tool		Key File											
Resource	es		Key Contain	er										
XML Document Generat Browse Information Build Events	Delay Sign				No									
	-	Data Execution Indicates that a Prevention feat	n Preve in execu ture. (/N	ntion (DEF table was t IXCOMPAT	ested to	be compatible OMPAT:NO)	e with the Wi	ndows Data Execution						

<In case of Visual Studio 2010>

VC-Sample Property Pages		8 💌
Configuration: Active(Debug)	Platform: Active(Win32)	Configuration Manager
> Common Properties	Entry Point	main
Configuration Properties	No Entry Point	No
General	Set Checksum	No
Debugging	Base Address	
VC++ Directories	Randomized Base Address	Yes (/DYNAMICBASE)
▷ C/C++	Fixed Base Address	No (/FIXED:NO)
⊿ Linker	Data Execution Prevention (DEP)	No (/NXCOMPAT:NO)
General	Turn Off Assembly Generation	No
Input	Unload delay loaded DLL	
Manifest File	Nobind delay loaded DLL	E
Debugging	Import Library	
System	Merge Sections	
Optimization Embedded ID	Target Machine	MachineX86 (/MACHINE:X86)
Advanced	Profile	No
Command Line	CLR Thread Attribute	
Nanifest Tool	CLR Image Type	Default image type
> Resources	Key File	
XML Document Generator	Key Container	
Browse Information	Delay Sign	
Build Events	CLR Unmanaged Code Check	
Custom Build Step	Error Reporting	Queue For Next Login (/ERRORREPORT:QUEUE)
Managed Resources	SectionAlignment	*
< •	Data Execution Prevention (DEP) Marks an executable as having been tested to (/NXCOMPAT[:NO])	be compatible with Windows Data Execution Prevention feature.
		OK Cancel Apply

(2) Build the program.



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5. Workarounds for Problems

This chapter explains the occurrence cause and workaround for each symptom caused due to the effect of DEP.

5.1 An ACT Control Added on a Form May not be Displayed

(1) Symptom

As a Visual Studio .NET project program is created, an ACT control added on a form is not displayed. Only its solid border is shown as selected. (For distinguishing Visual Studio .NET projects, refer to "Chapter 6 Distinguishing Types of Projects".)

WindowsApplication - Microsoft Visual Studio	
File Edit View Project Build Debug Data Format Tools Test Window Help	a ****
거 [[수 과] 것 수 표] 근 신 없 위 [야 않 않 않] 을 했 함 때 [阳 [게 집] 표] 패를	
Coulton Explorer - Windo + 4 X Form1.h [Design]* Start Page	- >
□ Oxfactor □ Product Projection □ Promit A □ Promit A □ Promit A □ Promit A □ Promit A □ Provide □ Provide Provide <	
Set. 20 Dr. 10 Manages	- 3 : Etc. 10-
outrighter	viie Liije
Code Definition Window 21 Call Browser 🛄 Output 😩 Error List	
Ready	100 all 75×23

(2) Occurrence Cause

This problem occurs if an ACT control is added on a form in a Visual Studio .NET project when DEP is enabled to ACT controls. The following shows the cases that problems occur for DEP is enabled.

Creation environment		DEP Config	guration
Creatio	ii chvii onment	OptIn, OptOut	AlwaysOn
	Visual Studio 2010		
64-bit Windows 7	Visual Studio 2008	0	
	Visual Studio 2005	-	
Windows Vista,	Visual Studio 2008	0	0
32-bit Windows 7	Visual Studio 2005		
Windows VD	Visual Studio 2008	-	
willdows AF	Visual Studio 2005		

Table 5.1-1 DEP configurations that may cause this problem

O: Causes problems -: Does not cause problems



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(3) Workaround

To workaround this problem, change the DEP configuration as follows.

Table 5.1-2 DEP Configurations for avoiding this problem

Creation e	nvironment	DEP Configuration
	Visual Studio 2010	AlwaysOff
	Visual Studio 2008	Alwayson
		Other than AlwaysOn
64-bit Windows 7		(When AlwaysOn:
	Visual Studio 2005	Change to OptIn,
		When other than AlwaysOn:
		No change necessary)
Windows Vista,	Visual Studio 2008	AlwaysOff
32-bit Windows 7	Visual Studio 2005	Other than AlwaysOn
	Visual Studio 2008	(When AlwaysOn:
Windows XP		Change to OptIn,
	Visual Studio 2005	When other than AlwaysOn:
		No change necessary)

When the DEP configuration cannot be changed, this problem can be avoided by creating a program using an ACT control without pasting it to a form (Reference).



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5.2 Adding an ACT Control to a Form Ends Visual Studio in Error

(1) Symptom

When a Visual Studio .NET project program is created, adding an ACT control to a form with the designer displays the following dialog box and ends Visual Studio in error.

If a Visual Studio .NET project program including a form with an ACT control is debugged, an exception may occur (0xC0000005:Access violation) and the program may be closed. (For distinguishing Visual Studio .NET projects, refer to "Chapter 6 Distinguishing Types of Projects".)

😽 Micr	osoft Visual Studio
	Microsoft Visual Studio has encountered a problem and needs to close.
	If you had files open that contained unsaved changes, these changes might be lost.
	Check online for a solution and close the program
	Close the program
	Debug the program
🕑 V	iew problem details

(2) Occurrence Cause

The problem occurs if an ACT control is added to a form in a Visual Studio .NET project while DEP is enabled to ACT controls.

The following table lists whether a problem occurs with DEP enabled.

Table 5.2-1 DEP configurations that may cause this problem

Creation environment		DEP Configuration		
Creation e	iivii oiiment	OptIn, OptOut	AlwaysOn	
Windows Vista, 32-bit Windows 7	Visual Studio 2010	0	0	
Windows XP	Visual Studio 2010	-		

 \bigcirc : Causes problems $\ \ \ \$: Does not cause problems

(3) Workaround

To workaround this problem, change the DEP configuration as follows.

Table 5.2-2 DEP Configurations for avoiding this problem

Creation environment		DEP Configuration
Windows Vista, 32-bit Windows 7	Visual Studio 2010	AlwaysOff
		Other than AlwaysOn (When AlwaysOn:
Windows XP	Visual Studio 2010	Change to OptIn, When other than AlwaysOn: No change necessary)

When the DEP configuration cannot be changed, this problem can be avoided by creating a program using an ACT control without pasting it to a form (Reference).



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5.3 Designer Display May be Failed

(1) Symptom

When a Visual Studio .NET project program is created, opening a form including an ACT control with the designer may cause an error. (For distinguishing Visual Studio .NET projects, refer to "Chapter 6 Distinguishing Types of Projects".)



(2) Occurrence Cause

This problem occurs if a form including an ACT control is opened with the designer in a Visual Studio .NET project when DEP is enabled to ACT controls.

The following shows the cases that problems occur for DEP is enabled.

Table 5.3-1 D	EP configurat	tions that may	cause this	problem
	2)			

Creation environment		DEP Configuration	
		OptIn, OptOut	AlwaysOn
Windows Vista,	Visual Studio 2008	0	
32-bit Windows 7	Visual Studio 2005		0
Win Jame VD	Visual Studio 2008	-	0
windows AP	Visual Studio 2005		

O: Causes problems -: Does not cause problems

(3) Workaround

To workaround this problem, change the DEP configuration as follows.

Table 5.3-2 DEP Configurations for avoiding this problem

Creation environment		DEP Configuration
Windows Vista,	Visual Studio 2008	AlwaysOff
32-bit Windows 7	Visual Studio 2005	Other than AlwaysOn
Windows XP	Visual Studio 2008	(When AlwaysOn: Change to OptIn,
	Visual Studio 2005	When other than AlwaysOn: No change necessary)

When the DEP configuration cannot be changed, this problem can be avoided by creating a program using an ACT control without pasting it to a form (Reference).



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5.4 Displaying a Designer Fails to Display an ACT Control

(1) Symptom

If a form including an ACT control is opened with the designer when a Visual Studio .NET project program is created, the ACT control is not displayed. Only its solid border is shown as selected. (For distinguishing Visual Studio .NET projects, refer to "Chapter 6 Distinguishing Types of Projects".)



(2) Occurrence Cause

This problem occurs if a form including an ACT control is opened with the designer in a Visual Studio .NET project when DEP is enabled to ACT controls.

The following shows the cases that problems occur for DEP is enabled.

Table 5.4-1 DEP	configurations	that may	cause	this	problem
	<u> </u>				

Creation environment		DEP Configuration	
		OptIn, OptOut	AlwaysOn
	Visual Studio 2010	0	
64-bit Windows 7	Visual Studio 2008	0	0
	Visual Studio 2005	_	

○: Causes problems -: Does not cause problems

(3) Workaround

To workaround this problem, change the DEP configuration as follows.

Table 5.4-2 DEP	Configurations	for avoiding	this problem
	6	U 0	

Creation environment		DEP Configuration
Visual Studio 2010		AlwayaOff
	Visual Studio 2008	Alwayson
		Other than AlwaysOn
64-bit Windows 7		(When AlwaysOn:
	Visual Studio 2005	Change to OptIn,
		When other than AlwaysOn:
		No change necessary)

When the DEP configuration cannot be changed, this problem can be avoided by creating a program using an ACT control without pasting it to a form (Reference).

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5.5 Displaying a Designer Ends Visual Studio in Error

(1) Symptom

If a form including an ACT control is opened with the designer when a Visual Studio .NET project program is created, the following dialog box appears and Visual Studio ends in error.

If a Visual Studio .NET project program including a form with an ACT control is debugged, an exception may occur (0xC0000005:Access violation) and the program may be closed. (For distinguishing Visual Studio .NET projects, refer to "Chapter 6 Distinguishing Types of Projects".)



(2) Occurrence Cause

The problem occurs if a form including an ACT control is opened with the designer in a Visual Studio .NET project while DEP is enabled to ACT controls.

The following shows the cases that problems occur for DEP is enabled.

Creation environment		DEP Configuration		
Creation en	Ivironment	OptIn, OptOut	AlwaysOn	
Windows Vista, 32-bit Windows 7	Visual Studio 2010	0	0	
Windows XP	Visual Studio 2010	-	_	

O: Causes problems -: Does not cause problems

(3) Workaround

To workaround this problem, change the DEP configuration as follows.

Table 5.5-2 DEP Configurations for avoiding this problem

Creation environment		DEP Configuration
Windows Vista, 32-bit Windows 7	Visual Studio 2010	AlwaysOff
		Other than AlwaysOn (When AlwaysOn:
Windows XP	Visual Studio 2010	Change to OptIn, When other than AlwaysOn:

When the DEP configuration cannot be changed, this problem can be avoided by creating a program using an ACT control without pasting it to a form (Reference).



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5.6 Testing a Dialog Box May End Visual Studio in Error

(1) Symptom

When an MFC project program is created, testing a dialog box may end Visual Studio in error. (For distinguishing MFC projects, refer to "Chapter 6 Distinguishing Types of Projects".)



(2) Occurrence Cause

This problem occurs if an ACT control is added on a form and then "Test Dialog" is performed in an MFC project when DEP is enabled to ACT controls.

The following shows the cases that problems occur for DEP is enabled.

Creation environment		DEP Config	DEP Configuration	
		OptIn, OptOut	AlwaysOn	
Windows Visto	Visual Studio 2010			
32-bit Windows 7	Visual Studio 2008	0		
	Visual Studio 2005			
	Visual Studio 2010		0	
Windows XP	Visual Studio 2008	-		
	Visual Studio 2005			

Table 5.6-1 DEP configurations that may cause this problem

○: Causes problems -: Does not cause problems



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(3) Workaround

To workaround this problem, change the DEP configuration as follows.

Table 5.6-2 DEP	Configurations	for avoiding	this problem
		43	

Creation environment		DEP Configuration
Windows Vista, 32-bit Windows 7	Visual Studio 2010	
	Visual Studio 2008	AlwaysOff
	Visual Studio 2005	Other than AlwaysOn
Windows XP	Visual Studio 2010	(When AlwaysOn:
	Visual Studio 2008	Change to OptIn, When other than AlwaysOn:
	Visual Studio 2005	No change necessary)

When the DEP configuration cannot be changed, this problem can be avoided by creating a program using an ACT control without pasting it to a form (Reference).



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5.7 Executing an MFC Project Program May Cause an Error

(1) Symptom

When an MFC project program including a form with an ACT control is created and executed, the following dialog box may be displayed and the program may be closed. When an MFC project program including a form with an ACT control is debugged with Visual Studio 2008 and Visual Studio 2010, an exception may occur (0xC0000005:Access violation) and the program may be closed. (For distinguishing MFC projects, refer to "Chapter 6 Distinguishing Types of Projects".)



*1: The character string specified in "FileDescription" of "VS_VERSION_INFO" in the resource is displayed as the program name.

When the <u>Close the program</u> button is clicked, the message "To help protect your computer, Data Execution Prevention has closed the program^{*1}." is displayed on the task bar.



*1: The character string specified in "FileDescription" of "VS_VERSION_INFO" in the resource is displayed as the program name.



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(2) Occurrence Cause

This problem occurs if any of the following conditions is true when a program including a form with an ACT control is created.

Table 5.7-1 DE	P configurations	that may c	ause this problem	ı
	0	2		

Execution	DEP configuration	
environment	OptIn, OptOut	AlwaysOn
Windows Vista, 32-bit Windows 7	Causes problems only if "Image is compatible with DEP" is selected in [Linker]-[Advanced]-[Data Execution Prevention (DEP)] in the Property Pages when the program is created (built).	0
Windows XP	-	

(3) Workaround

To workaround this problem, change the DEP configuration and the linker option (recreate the program).

 (a) Possible to change the linker option and create user applications Select "Image is not compatible with DEP (/NXCOMPAT:NO)" in [Linker]-[Advanced]-[Data Execution

Prevention (DEP)] in the MFC project Property Pages, and create user applications. Configure DEP as follows.

O: Causes problems -: Does not cause problems

Table 5.7-2 DEP configuration when the linker option is changeable

Execution environment	DEP configuration
Windows Vista,	Other than AlwaysOn
32-bit Windows 7	(When AlwaysOn:
	Change to OptIn,
Windows XP	When other than AlwaysOn:
	No change necessary)

(b) Impossible to change the linker option

When the linker option cannot be changed (when programs cannot be recreated), configure DEP to "AlwaysOFF".

Table 5.7-3 DEP configuration when the linker option is not changeable

Execution environment	DEP configuration	
Windows Vista,		
32-bit Windows 7	AlwaysOff	
Windows XP		



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6. Distinguishing Types of Projects

Types of projects can be distinguished based on the way of opening its form in the designer. The following shows the both cases of a Visual Studio .NET project and MFC project.

- (1) Visual Studio .Net project
 - In the "Solution Explorer", double click a form (*.h file or *.vb file). When a form is opened in this way, its project type is the Visual Studio .NET project.

Solution 'Sample2005' (1 project)	🖳 Sample			
📄 📴 Header Files	Control			
Form1.h	ActEasyIF ActQCPUQ	LogicalStationNu	imber:	Open
n resource.n n stdafx.h				Close
Source Files	Random Read/Write			
ReadMe.txt	DeviceName:	DeviceSize:	DeviceData:	
		•	*	ReadDeviceRandom2
		*		WriteDeviceRandom2
	Block Read/Write			
	DeviceName:	DeviceSize:	DeviceData:	ReadDeviceBlock2
• III				WriteDeviceBlock2

(2) MFC project

In the "Resource view", double click a resource ID under [Dialog]. When a form is opened in this way, its project type is the MFC project.

a sampleEng.rc	La contra e la con	l
DID_SAMPLEENG_DIALOG	Control ActAJ71QE71UDP Control Device Name Sample edit bo: Device Value Sample edit bo: Close Communication	ActEasylf Result Return GetDevice Sample edit box Sample edit box Sample edit box Close Close Comparison Close Comparison Comp
4		•

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REVISIONS

Version	Print Date	Revision
-	December 2008	First edition
А	May 2010	Compatibility with Windows 7 is added.
В	June 2011	Compatibility with 64-bit Windows 7 is added. Compatibility with Visual Studio 2010 is added.
С	August 2012	The note on the symptom occurrence software version (MX Component Version 3 or earlier) is added.

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