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Microsoft ActiveMovie Direct3D DirectDraw DirectInput DirectPlay DirectS
ound DirectX MS-DOS Win32 Windows ,,Windows NT, • Microsoft
Corporation,• ,,,,‘ ,,,, •,,,

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 DirectX 3, %o
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 DirectX Windowsffff fffŠ",—" §
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 DirectX SDK §
 DirectX SDKfff fff §
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 DirectX,fff fff fffffff fff §
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 DirectX COMfff□ffff.....§
 C++,COM,fff ffff.....
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 DirectX 3 SDK,, <,,?.....§
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DirectX,—“
Microsoft DirectX™ Software Development Kit (SDK)
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rectXffff□,□Ž‘,ffff□ff□f,ffffffffffff fffŠ”,—,,,
Microsoft, Microsoft
Windowsfff ffffffff,“ ,,ffff fff,fff fff, MS-
DOS,f f ff f<“ ,,ffff fff,fff□fff^□,,,,,DirectX,Š”, Š<, • %o
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DOSfff ff f,ffff fff•,,,,,,^ ,ff fff,□,□,□f□ffffff□f,,,f□f
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Microsoft, Windowsf f,ffff fff, Ā ,, —,ffff fffff ,—
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f,ffffff□fff,Ž,Ā,, f ffff,’ , ‘ĀŠ,,,, f ffff,fff fff,,Š,
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Microsoft,DirectX,Š”,,,,,^,—“,,,, Windowsfff ffffŠ<,f fŠ”,‘ ,,, D
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DOSf□f,,,□,□f□f,Š”Ž, ,,,,f f, ‘,f ffffŽ‘, ,,,,,,, ,,,DirectX,,
f fŠ”Ž, f ffff,ffffff,——,Ž,,,, ffff”^‘ ,,—““,,,,,
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• f□f□ff□f□f□ffffff,fffffffffff (GDI)

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- Direct3D, Direct3D, ...
- DirectInput™ Windows の API, ... DirectInput
- DirectSetup, ... DirectSetup
- AutoPlay, □CD-ROM Windows 95 のののAutoPlay AutoPlay

AutoPlay Microsoft Win32® API の DirectX のの

DirectX SDK の

DirectX のののSDK Sdk\Samples の

の

DirectX ののの

の IDirectDraw2::CreateSurface

IDirectDraw2_CreateSurface
DirectDraw

```
ret = IDirectDraw2_CreateSurface (lpDD, &ddsd, &lpDDS,
    NULL);
```

のの

DirectX

DirectX

(COM) COM ののの

- IUnknown
- DirectX COM
- C++ COM
- C COM の

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DirectX SDK, API, COM, の

OLE, COM OS

DirectX API OLE の

COM, DirectDraw, IDirectDraw2::GetDisplayMode, IDirectDraw2, OLE

()

QueryInterface, OLE, IUnknown

IUnknown

COM, IUnknown, DirectX, IUnknown

- AddRef の
- QueryInterface, %o
- Release, %o

AddRef, Release, DirectDrawSurface, 1, AddRef

AddRef Release

Release 0

QueryInterface

QueryInterface

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QueryInterface

AddRef

Release

xe "IUnknown\:\:AddRef"§

IUnknown::AddRef

ULONG AddRef();

•

のAddRef
Release

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IUnknown

1

xe "IUnknown\:\:QueryInterface"§

IUnknown::QueryInterface

HRESULT QueryInterface(REFIID riid, LPVOID* **obp**);

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,ff ', fff fff^,fff,,

DirectDraw

DDERR_INVALIDOBJECT

DDERR_INVALIDPARAMS

DDERR_OUTOFMEMORY (IDirectDrawSurface2 の)

DirectSound

DSERR_GENERIC (IDirectSound IDirectSoundBuffer)

DSERR_INVALIDPARAM

DirectPlay

DPERR_INVALIDOBJECT

DPERR_INVALIDPARAMS

Direct3D QueryInterface Direct3D の Direct3D の

riid

の

obp

QueryInterface ffff, Microsoft, ffff, IUnknown ffff, ^, ...

xe "IUnknown\:\:Release"§

IUnknown::Release

ULONG Release();

•

0 AddRef

ffff, ffffff, IUnknown fff ffff, ^, ...
DirectX COM fff ffff
DirectX SDK, fff ffff, COM ffffffff Š, Š-“, fff, ...
IDirectDraw2 IDirectSound IDirectPlay, ffff, ffffff, fff fff
f, IUnknown OLE fff ffff, “ , Š-
fffff, , COM ffffff ;, —
Win32, CoCreateInstance Š , Š ffffff, fff

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~”, DirectX SDK,fffffffff, Šfff,,,,Ž—
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, ffffffff,*DirectDrawSurfaceffffff, f ffffffff,*DirectDrawPalettef
ffff, ,,,” “—
, DirectSoundffffff,f ffff f,* ,f f ,%CE,*DirectSoundBufferffffff
f, ,,
% ^ffffff ,”—,%o, Ž—,fffffffffff, fff f,fff,

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C++ COM

C++ COM
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 C++

C++ COM V のの
 V QueryInterface の
 QueryInterface

COM C++ this の COM
 COM C++ C++ の this C++

C の COM の

COM C C

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- のの V

```

    IDirectDraw2::CreateSurface(
        &ddsd, &lpDDS,
        NULL);

```

ffffffffff-,ffffff

- COM
 QueryInterface AddRef Release

C++ の
 DirectX

C++の

DirectPlay IDirectPlay2 IDirectPlay2A IDirectPlayLobby
DirectPlay DirectPlay Version 3 ?

Direct3D

API の の の Direct3D Direct3D

DirectInput

DirectInput

DirectSetup

DirectSetup

AutoPlay

AutoPlay の fffff, , Windows NT®, •, Ž,,

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SMALL CAPITALS

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FULL CAPITALS

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monospace

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