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Category	<input checked="" type="checkbox"/> FAQ <input type="checkbox"/> SOP	Related OS	
Abstract	How to list all DAQ devices using DAQNav SDK 4 library function		
Keyword	Device list, available device		
Related Product	DAQ devices		

■ Problem Description:

How to list all DAQ devices using DAQNav SDK 4.0 or higher version library.

■ Brief Solution - Step by Step:

Here are two methods to list DAQ devices when programming.

1. To list all DAQ devices.

** C# example code

```
//***** 1. List all supported device example *****//
List<DeviceTreeNode> Alldev = DeviceCtrl.InstalledDevices;
List<DeviceTreeNode>.Enumerator allsupdev = DeviceCtrl.InstalledDevices.GetEnumerator();
allsupdev.MoveNext();
Console.WriteLine("Available Device count = {0}", Alldev.Count);
for (int i = 0; i < Alldev.Count; i++)
{
    Console.WriteLine("{0} Device Number is {1}, Device is " + allsupdev.Current.Description, i, allsupdev.Current.DeviceNumber);
    allsupdev.MoveNext();
}
Console.WriteLine("----- End of list all supported device -----\\n\\n");
//***** 1. End *****//
```

Result :

```
file:///C:/Advantech/DAQNav/Examples/C#_Console/List supported devices example_Csharp/List supported devices example/List supported devices ex...
Available Device count = 3
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
2) Device Number is 4, Device is PCI-1753,BID#0
----- End of list all supported device -----
```

**** C++ example code**

```
//***** 1. List all supported device example *****//
DeviceCtrl *devicectrl;
ICollection<DeviceTreeNode>* Alldev = devicectrl->getInstalledDevices();
printf("Available Device count = %d\n", Alldev->getCount());
for (int i = 0; i < Alldev->getCount(); i++)
{
    printf("%d) Device Number is %d, Device is %ls\n", i, Alldev->getItem(i).DeviceNumber, Alldev->getItem(i).Description);
}
printf("----- End of list all supported device ----- \n\n");
//***** 1. End *****//
```

Result :

```
C:\Advantech\DAQNav\Examples\C++_Console\List supported devices example_Cpp\List supported devices example\Debug\List supported devices exa...
Available Device count = 3
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
2) Device Number is 4, Device is PCI-1753,BID#0
----- End of list all supported device -----
```

2. To list DAQ devices by function type means that it may list which device can use this function. And it's compatible to use different functions like WaveformAiCtrl or BufferedAiCtrl ...etc.

**** C# example code**

```
//***** 2. List device by card's type *****//
InstantDiCtrl instantDictrl = new InstantDiCtrl();
InstantDoCtrl instantDoctrl = new InstantDoCtrl();
InstantAiCtrl instantAictrl = new InstantAiCtrl();
InstantAoCtrl instantAoctrl = new InstantAoCtrl();

//list device which has instanDiCtrl supported
Console.WriteLine("instanDiCtrl available Device count = {0}", instantDictrl.SupportedDevices.Count);
List<DeviceTreeNode>.Enumerator DItypedev = instantDictrl.SupportedDevices.GetEnumerator();
DItypedev.MoveNext();
for (int i = 0; i < instantDictrl.SupportedDevices.Count; i++)
{
    Console.WriteLine("{0}) Device Number is {1}, Device is " + DItypedev.Current.Description, i, DItypedev.Current.DeviceNumber);
    DItypedev.MoveNext();
}
Console.WriteLine("----- End of list DI supported device ----- \n\n");
```



```
//list device which has instanDoCtrl supported
Console.WriteLine("instanDoCtrl available Device count = {0}", instantDoCtrl.SupportedDevices.Count);
List<DeviceTreeNode>.Enumerator D0typedev = instantDoCtrl.SupportedDevices.GetEnumerator();
D0typedev.MoveNext();
for (int i = 0; i < instantDoCtrl.SupportedDevices.Count; i++)
{
    Console.WriteLine("{0} Device Number is {1}, Device is " + D0typedev.Current.Description, i, D0typedev.Current.DeviceNumber);
    D0typedev.MoveNext();
}
Console.WriteLine("----- End of list DO supported device -----\\n\\n");

//list device which has instanAiCtrl supported
Console.WriteLine("instanAiCtrl available Device count = {0}", instantAiCtrl.SupportedDevices.Count);
List<DeviceTreeNode>.Enumerator A1typedev = instantAiCtrl.SupportedDevices.GetEnumerator();
A1typedev.MoveNext();
for (int i = 0; i < instantAiCtrl.SupportedDevices.Count; i++)
{
    Console.WriteLine("{0} Device Number is {1}, Device is " + A1typedev.Current.Description, i, A1typedev.Current.DeviceNumber);
    A1typedev.MoveNext();
}
Console.WriteLine("----- End of list AI supported device -----\\n\\n");

//list device which has instanAoCtrl supported
Console.WriteLine("instanAoCtrl available Device count = {0}", instantAoCtrl.SupportedDevices.Count);
List<DeviceTreeNode>.Enumerator A0typedev = instantAoCtrl.SupportedDevices.GetEnumerator();
A0typedev.MoveNext();
for (int i = 0; i < instantAoCtrl.SupportedDevices.Count; i++)
{
    Console.WriteLine("{0} Device Number is {1}, Device is " + A0typedev.Current.Description, i, A0typedev.Current.DeviceNumber);
    A0typedev.MoveNext();
}
Console.WriteLine("----- End of list AO supported device -----\\n\\n");
//***** 2. End ***** //
```

Result :

```
file:///C:/Advantech/DAQNav/Examples/C#_Console/List supported devices example_Csharp/List supported devices example/List supported devices ex...
instanDiCtrl available Device count = 3
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
2) Device Number is 4, Device is PCI-1753,BID#0
----- End of list DI supported device -----

instanDoCtrl available Device count = 3
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
2) Device Number is 4, Device is PCI-1753,BID#0
----- End of list DO supported device -----

instanAiCtrl available Device count = 1
0) Device Number is 0, Device is DemoDevice,BID#0
----- End of list AI supported device -----

instanAoCtrl available Device count = 2
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
----- End of list AO supported device -----
```

**** C++ example code**

```

//***** 2. List device by card's type *****//
InstantDiCtrl * instantDiCtrl = InstantDiCtrl::Create();
InstantDoCtrl * instantDoCtrl = InstantDoCtrl::Create();
InstantAiCtrl * instantAiCtrl = InstantAiCtrl::Create();
InstantAoCtrl * instantAoCtrl = InstantAoCtrl::Create();

//list device which has instanDiCtrl supported
printf("instantDiCtrl available Device count = %d\n", instantDiCtrl->getSupportedDevices()->getCount());
ICollection<DeviceTreeNode>* DItypedev = instantDiCtrl->getSupportedDevices();
for (int i = 0; i < instantDiCtrl->getSupportedDevices()->getCount(); i++)
{
    printf("%d) Device Number is %d, Device is %ls\n", i, DItypedev->getItem(i).DeviceNumber, DItypedev->getItem(i).Description);
}
printf("----- End of list DI supported device ----- \n\n");

//list device which has instanDoCtrl supported
printf("instantDoCtrl available Device count = %d\n", instantDoCtrl->getSupportedDevices()->getCount());
ICollection<DeviceTreeNode>* DOtypedev = instantDoCtrl->getSupportedDevices();
for (int i = 0; i < instantDoCtrl->getSupportedDevices()->getCount(); i++)
{
    printf("%d) Device Number is %d, Device is %ls\n", i, DOtypedev->getItem(i).DeviceNumber, DOtypedev->getItem(i).Description);
}
printf("----- End of list DO supported device ----- \n\n");

//list device which has instanAiCtrl supported
printf("instantAiCtrl available Device count = %d\n", instantAiCtrl->getSupportedDevices()->getCount());
ICollection<DeviceTreeNode>* AItypedev = instantAiCtrl->getSupportedDevices();
for (int i = 0; i < instantAiCtrl->getSupportedDevices()->getCount(); i++)
{
    printf("%d) Device Number is %d, Device is %ls\n", i, AItypedev->getItem(i).DeviceNumber, AItypedev->getItem(i).Description);
}
printf("----- End of list AI supported device ----- \n\n");

//list device which has instanAoCtrl supported
printf("instantAoCtrl available Device count = %d\n", instantAoCtrl->getSupportedDevices()->getCount());
ICollection<DeviceTreeNode>* AOtypedev = instantAoCtrl->getSupportedDevices();
for (int i = 0; i < instantAoCtrl->getSupportedDevices()->getCount(); i++)
{
    printf("%d) Device Number is %d, Device is %ls\n", i, AOtypedev->getItem(i).DeviceNumber, AOtypedev->getItem(i).Description);
}
printf("----- End of list AO supported device ----- \n\n");
//***** 2. End *****//

```

Result :

```
C:\Advantech\DAQNavi\Examples\C++_Console\List supported devices example_Cpp\List supported devices example(Debug)\List supported devices ex...
instanDiCtrl available Device count = 3
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
2) Device Number is 4, Device is PCI-1753,BID#0
----- End of list DI supported device -----

instanDoCtrl available Device count = 3
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
2) Device Number is 4, Device is PCI-1753,BID#0
----- End of list DO supported device -----

instanAiCtrl available Device count = 1
0) Device Number is 0, Device is DemoDevice,BID#0
----- End of list AI supported device -----

instanAoCtrl available Device count = 2
0) Device Number is 0, Device is DemoDevice,BID#0
1) Device Number is 1, Device is PCI-1721,BID#3
----- End of list AO supported device -----
```

- **Reference :**
DAQNavi SW manual