

# Natural Data Types

Some of the parameter access functions (like `nni_get_parm`, `nni_put_parm`) use a buffer that contains a parameter value in the correct representation. The length of the buffer depends on the Natural data type. The data format of the buffer is defined according to the following table:

Natural Data Type	Buffer Format
A	char[ ]
B	byte[ ]
C	short
F4	float
F8	double
I1	signed char
I2	short
I4	int
L	NNI_L_TRUE or NNI_L_FALSE, see <i>natni.h</i>
HANDLE OF OBJECT	byte[8]
P, N, D, T	The buffer content should be created from a string representation with the function <code>nni_from_string</code> . It can be transformed to a string representation with the function <code>nni_to_string</code> .
U	An array of UTF-16 characters. On Windows and on those UNIX platforms where a <code>wchar</code> corresponds to a UTF-16 character, this is a <code>wchar[]</code> .

Some of the parameter access functions (like `nni_get_parm`, and `nni_put_parm`) require a Natural data type to be specified. In these cases the following constants should be used. The constants are defined in the header file *natni.h*. This file is contained in the directory `%NATDIR%\%NATVERS%\samples\sysexnni`.

<b>Natural Data Type</b>	<b>Constant</b>
A	NNI_TYPE_ALPHA
B	NNI_TYPE_BIN
C	NNI_TYPE_CV
D	NNI_TYPE_DATE
F	NNI_TYPE_FLOAT
I	NNI_TYPE_INT
L	NNI_TYPE_LOG
N	NNI_TYPE_NUM
HANDLE OF OBJECT	NNI_TYPE_OBJECT
P	NNI_TYPE_PACK
T	NNI_TYPE_TIME
U	NNI_TYPE_UNICODE