

# 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	<code>char[ ]</code>
B	<code>byte[ ]</code>
C	<code>short</code>
F4	<code>float</code>
F8	<code>double</code>
I1	<code>signed char</code>
I2	<code>short</code>
I4	<code>int</code>
L	<code>NNI_L_TRUE</code> or <code>NNI_L_FALSE</code> , see <i>natni.h</i>
HANDLE OF OBJECT	<code>byte[8]</code>
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 and OpenVMS 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.`

Natural Data Type	Constant
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