

MATLAB Mapping for Dictionaries



There are two mappings for a Slice [dictionary](#), depending on its key type:

Key Type	Value Type	Mapped Type	Comments
Integral type (short, int, long), bool, byte, enum, string	Any	containers.Map	Enumeration keys must be converted to integers.
struct	Any	structure array	containers.Map does not support user-defined key types.

The mapping generates a class with the same name as the dictionary. This class provides one useful function for applications: a `new` function that returns an empty instance of the mapped type.

On this page:

- [Mapping to containers.Map](#)
- [Mapping to Structure Array](#)

Mapping to containers.Map

Consider the definition of our [EmployeeMap](#) once more:

Slice
<pre>dictionary<long, Employee> EmployeeMap;</pre>

Since the key is a primitive type, `EmployeeMap` maps to `containers.Map`. We can use it as shown below:

MATLAB
<pre>em = containers.Map('KeyType', 'int64', 'ValueType', 'any'); e = Employee(); e.number = 31; e.firstName = 'James'; e.lastName = 'Gosling'; em(e.number) = e;</pre>

The value for `KeyType` and `ValueType` depends on the corresponding Slice type as shown in the following table:

Slice Type	Corresponding KeyType	Corresponding ValueType
bool	int32	logical
byte	int32	uint8
short	int32	int16
int	int32	int32
long	int64	int64
enum	int32	any
string	char	char
float		single
double		double
any other type		any

Mapping to Structure Array

A dictionary with a structure key type maps to a MATLAB structure array. This mapping sacrifices some functionality, most notably the efficient indexing provided by `containers.Map`, but it's a straightforward mapping that utilizes the native MATLAB structure type.

Consider this example:

Slice

```
struct ID
{
    string symbol;
    string exchange;
}

dictionary<ID, double> Quotes;
```

We can construct this dictionary in MATLAB as follows:

MATLAB

```
quotes = [];
quotes(1).key = ID('CVX', 'NYSE');
quotes(1).value = 100.00;
```

Each element of the structure array must have `key` and `value` fields whose types correspond to the mapped types for the Slice dictionary's key and value.

An empty dictionary with a `struct` key type is mapped to an empty structure array with fields named `key` and `value`.

See Also

- [Dictionaries](#)

