

AFAIU from the MCS_PHS specs, the memory cost parameter dCostLen is ineffective:

https://password-hashing.net/submissions/specs/MCS_PHS-v0.pdf

In module [mcs_psw.cpp](#) present API function

```
int PHS(void *out, size_t outlen, const void *in, size_t inlen, const void *salt, size_t saltlen, unsigned int t_cost, unsigned int m_cost)
```

In MCS_PHS-v0.pdf present function PBKDF_MCS (P, dpLen, S, dsLen, c, dCostLen, dkLen). In this function:

P – password, parameter *in in PHS;

dpLen - password length, parameter inlen in PHS;

S - salt, parameter *salt in PHS;

dsLen - parameter saltlen in PHS;

c - number of cycles in the second part of PBKDF_MCS, parameter t_cost in PHS, may be 0;

dCostLen - initial block length before first part of PBKDF_MCS, parameter m_cost in PHS, it should be before (dpLen + dsLen + 2) and 256. Before performing first part of PBKDF_MCS PHS fill this tmp memory: password len (1 byte), password (dpLen bytes), salt len (1 byte), salt (dsLen bytes), and tmp[i] = i for other bytes.

So final result depended from dCostLen parameters. It's possible to see this in control examples in MCS_PHS-v0.pdf and in [test program](#) in submission. For example, this is two my tests:

Test 1. dCostLen = 100.

```
##### test MCS_PSW #####
```

```
##### Hash for password qwerty12345 #####
```

```
##### Salt AE0F5570C2BD3E9024CA767FB86D1087, c = 0, Cost = 100 #####
```

```
##### 492146F7434A256D95914EE82EB02BD5ABAD06C632981CF48BE0926F7B9E0C27  
#####
```

Test 2. dCostLen = 101.

```
##### test MCS_PSW #####
```

```
##### Hash for password qwerty12345 #####
```

```
##### Salt AE0F5570C2BD3E9024CA767FB86D1087, c = 0, Cost = 101 #####
```

F24211EBAC8E5495DD9ED0C8FEDAC7111A66FA6EC8F6A00D43E1A95E50392D3D
#####

I can't understand what means "memory cost parameter". In [submission requirements](#) about this parameter said: "The `t_cost` and `m_cost` arguments are intended to parameterize time and memory usage, respectively, however this is not a strict requirement (only one parameter may be effective, `m_cost` might affect time, etc.)."