

**NAME**

`EVP_PKEY_CTX_new`, `EVP_PKEY_CTX_new_id`, `EVP_PKEY_CTX_dup`,  
`EVP_PKEY_CTX_free` - public key algorithm context functions.

**SYNOPSIS**

```
#include <openssl/evp.h>
```

```
EVP_PKEY_CTX *EVP_PKEY_CTX_new(EVP_PKEY *pkey, ENGINE *e);  
EVP_PKEY_CTX *EVP_PKEY_CTX_new_id(int id, ENGINE *e);  
EVP_PKEY_CTX *EVP_PKEY_CTX_dup(EVP_PKEY_CTX *ctx);  
void EVP_PKEY_CTX_free(EVP_PKEY_CTX *ctx);
```

**DESCRIPTION**

The `EVP_PKEY_CTX_new()` function allocates public key algorithm context using the algorithm specified in `pkey` and ENGINE `e`.

The `EVP_PKEY_CTX_new_id()` function allocates public key algorithm context using the algorithm specified by `id` and ENGINE `e`. It is normally used when no `EVP_PKEY` structure is associated with the operations, for example during parameter generation of key generation for some algorithms.

`EVP_PKEY_CTX_dup()` duplicates the context `ctx`.

`EVP_PKEY_CTX_free()` frees up the context `ctx`.

**NOTES**

The `EVP_PKEY_CTX` structure is an opaque public key algorithm context used by the OpenSSL high level public key API. Contexts **MUST NOT** be shared between threads: that is it is not permissible to use the same context simultaneously in two threads.

**RETURN VALUES**

`EVP_PKEY_CTX_new()`, `EVP_PKEY_CTX_new_id()`, `EVP_PKEY_CTX_dup()` returns either the newly allocated `EVP_PKEY_CTX` structure or `NULL` if an error occurred.

`EVP_PKEY_CTX_free()` does not return a value.

**SEE ALSO**

[EVP\\_PKEY\\_new\(3\)](#)

**HISTORY**

These functions were first added to OpenSSL 1.0.0.