

**NAME**

X509\_ALGOR\_dup, X509\_ALGOR\_set0, X509\_ALGOR\_get0, X509\_ALGOR\_set\_md,  
X509\_ALGOR\_cmp, X509\_ALGOR\_copy - AlgorithmIdentifier functions

**SYNOPSIS**

```
#include <openssl/x509.h>
```

```
X509_ALGOR *X509_ALGOR_dup(X509_ALGOR *alg);  
int X509_ALGOR_set0(X509_ALGOR *alg, ASN1_OBJECT *aobj, int ptype, void *pval);  
void X509_ALGOR_get0(const ASN1_OBJECT **paobj, int *pptype,  
                    const void **ppval, const X509_ALGOR *alg);  
void X509_ALGOR_set_md(X509_ALGOR *alg, const EVP_MD *md);  
int X509_ALGOR_cmp(const X509_ALGOR *a, const X509_ALGOR *b);  
int X509_ALGOR_copy(X509_ALGOR *dest, const X509_ALGOR *src);
```

**DESCRIPTION**

**X509\_ALGOR\_dup()** returns a copy of **alg**.

**X509\_ALGOR\_set0()** sets the algorithm OID of **alg** to **aobj** and the associated parameter type to **ptype** with value **pval**. If **ptype** is **V\_ASN1\_UNDEF** the parameter is omitted, otherwise **ptype** and **pval** have the same meaning as the **type** and **value** parameters to **ASN1\_TYPE\_set()**. All the supplied parameters are used internally so must **NOT** be freed after this call.

**X509\_ALGOR\_get0()** is the inverse of **X509\_ALGOR\_set0()**: it returns the algorithm OID in **\*paobj** and the associated parameter in **\*pptype** and **\*ppval** from the **AlgorithmIdentifier alg**.

**X509\_ALGOR\_set\_md()** sets the **AlgorithmIdentifier alg** to appropriate values for the message digest **md**.

**X509\_ALGOR\_cmp()** compares **a** and **b** and returns 0 if they have identical encodings and nonzero otherwise.

**X509\_ALGOR\_copy()** copies the source values into the dest structs; making a duplicate of each (and free any thing pointed to from within \*dest).

**RETURN VALUES**

**X509\_ALGOR\_dup()** returns a valid **X509\_ALGOR** structure or NULL if an error occurred.

**X509\_ALGOR\_set0()** and **X509\_ALGOR\_copy()** return 1 on success or 0 on error.

**X509\_ALGOR\_get0()** and **X509\_ALGOR\_set\_md()** return no values.

**X509\_ALGOR\_cmp()** returns 0 if the two parameters have identical encodings and nonzero otherwise.

## HISTORY

The **X509\_ALGOR\_copy()** was added in 1.1.1e.

## COPYRIGHT

Copyright 2002-2020 The OpenSSL Project Authors. All Rights Reserved.

Licensed under the Apache License 2.0 (the "License"). You may not use this file except in compliance with the License. You can obtain a copy in the file LICENSE in the source distribution or at <https://www.openssl.org/source/license.html>.