ExLookupNS

The ExLookupNS COM object is a DNS (Domain Name Service) component that can be used for network diagnosing, troubleshooting, and monitoring. The ExLookpNS allows developers to integrate the DNS protocol message sending capability into their applications. The ExLookupNS's object model is rich, flexible and very intuitive. For instance, the statement **.Query("exontrol.com").MailExchange** gives you the list of mail servers. It is fully compliant with RFC 1034, RFC 1035, RFC 1876 and RFC 1886

Here's the list of supported DNS record types:

- AAAA records(IPv6 addresses)
- A(Address)
- NS(NameServer)
- MD(MailDestination)
- MF(MailForwarder)
- CNAME(CanonicalName)
- SOA(ZoneOfAuthority)
- MB(MailBoxDomainName)
- MG(MailbogGroupMember)
- MR(MailRenameDomainName)
- WKS(WellKnwonService)
- PTR(DomainNamePointer)
- HINFO(HostInformation)
- MINFO(MailInformation)
- MX(MailExchange)
- LOC(Location)

The ExLookupNS component automatically detects configured DNS servers

How to get support?

To keep your business applications running, you need support you can count on.

Here are few hints what to do when you're stuck on your programming:

- Check out the samples - they are here to provide some quick info on how things should be done
- Check out the how-to questions using the eXHelper tool
- Check out the help - includes documentation for each method, property or event
- Check out if you have the latest version, and if you don't have it send an update request here.
- Submit your problem(question) here.

Don't forget that you can contact our development team if you have ideas or requests for new components, by sending us an e-mail at support@exontrol.com (please include the name of the product in the subject, ex: exgrid) . We're sure our team of developers will try to find a way to make you happy - and us too, since we helped.

Regards,
Exontrol Development Team

https://www.exontrol.com

constants QueryClassEnum

Specifies the type of the query being sent to a DNS server. Use the QueryClass property to specify the type of the DNS query.

Name	Value	Description
Internet	1	Internet (IN)
CSNET	2	CSNET (CS)
Chaos	3	Chaos (CH)
Hesiod	4	Hesiod (HS)
ANYCLASS	255	ANYCLASS

HostInformation object

The HostInformation object holds information about a host (HINFO). Use the HostInformation property to access the host information. The HINFO records are used to acquire general information about a host. The main use is for protocols such as FTP that can use special procedures when talking between machines or operating systems of the same type.

The following sample prints information about a host:

```
Dim n As New LookupNS
MsgBox n.Query("info.name-services.com").HostInformation.CPU
```

The HostInformation object supports the following properties and methods:

Name	Description
CPU	Specifies the type of the host's CPU.
OS	Specifies the host's operating system.

property HostInformation.CPU as String

Specifies the type of the host's CPU.

Type	Description
String	A string expression that indicates the CPU used by the host.

The CPU property retrieves the CPU used by the host. The Standard values for CPU and OS can be found in RFC-1010. Use the HostInformation property to access the HINFO record. HINFO records are used to acquire general information about a host. The main use is for protocols such as FTP that can use special procedures when talking between machines or operating systems of the same type.

property HostInformation.OS as String

Specifies the host's operating system.

Type	Description
String	A string expression which specifies the operating system type.

The Standard values for CPU and OS can be found in RFC-1010. Use the HostInformation property to access the HINFO record. HINFO records are used to acquire general information about a host. The main use is for protocols such as FTP that can use special procedures when talking between machines or operating systems of the same type.

Location object

The Location object holds the location information about hosts, networks, and subnets. Use the Location property to access the Location object. This RFC 1876 defines the format of a new Resource Record (RR) for the Domain Name System (DNS), and reserves a corresponding DNS type mnemonic (LOC) and numerical code (29).

The following sample displays location information of the host:

```
Dim n As New LookupNS
With n.Query("yahoo.com").Location
   Debug.Print "Latitude " & .Latitude
   Debug.Print "Longitude " & .Longitude
   Debug.Print "Altitude " & .Altitude
End With
```

The Location object supports the following properties and methods:

Name	Description
Altitude	Retrieves the altitude of the center of the sphere described by the Size property, in centimeters.
HorizontalPrecision	Specifies the horizontal precision of the data, in centimeters.
Latitude	Specifies the latitude of the center of the sphere described by the Size property, in thousandths of a second of arc.
Longitude	Retrieves the longitude of the center of the sphere described by the Size property, in thousandths of a second of arc, rounded away from the prime meridian.
Size	The diameter of a sphere enclosing the described entity, in centimeters.
Version	Retrieves the Version number of the representation.
VerticalPrecision	Specifies the vertical precision of the data, in centimeters.

property Location.Altitude as Long

Retrieves the altitude of the center of the sphere described by the Size property, in centimeters.

Type	Description
Long	A long expression that indicates the altitude of the center of the sphere described by the Size property, in centimeters.

The altitude of the center of the sphere described by the Size property. [RFC 1876]

property Location.HorizontalPrecision as Long

Specifies the horizontal precision of the data, in centimeters.

Type	Description
Long	A long expression that indicates the horizontal precision of the data, in centimeters.

The HorizontalPrecision property gives the horizontal precision of the data, in centimeters. This is the diameter of the horizontal "circle of error", rather than a "plus or minus" value. (This was chosen to match the interpretation of Size; to get a "plus or minus" value, divide by 2.) [RFC 1876]

property Location.Latitude as Long

Specifies the latitude of the center of the sphere described by the Size property, in thousandths of a second of arc.

Type	Description
Long	A long expression that specifies the latitude of the center of the sphere described by the Size property, in thousandths of a second of arc.

The latitude of the center of the sphere described by the Size property, expressed as a 32-bit integer, most significant octet first (network standard byte order), in thousandths of a second of arc. 2^31 represents the equator; numbers above that are north latitude. [RFC 1876]

property Location.Longitude as Long

Retrieves the longitude of the center of the sphere described by the Size property, in thousandths of a second of arc, rounded away from the prime meridian.

Type	Description
Long	A long expression that specifies the longitude of the center of the sphere described by the Size property, in thousandths of a second of arc, rounded away from the prime meridian.

The longitude of the center of the sphere described by the Size property, expressed as a 32-bit integer, most significant octet first (network standard byte order), in thousandths of a second of arc, rounded away from the prime meridian. 2^31 represents the prime meridian; numbers above that are east longitude. [RFC 1876]

property Location.Size as Long

The diameter of a sphere enclosing the described entity, in centimeters.

Type	Description
Long	A long expression that specifies the diameter of a sphere enclosing the described entity, in centimeters.

The Size property indicates the diameter of a sphere enclosing the described entity, in centimeters. [RFC 1876].

property Location.Version as Long

Retrieves the Version number of the representation.

Type	Description
Long	A long expression that indicates the Version number of the representation.

Version number of the representation. This must be zero. Implementations are required to check this field and make no assumptions about the format of unrecognized versions. [RFC 1876]

property Location.VerticalPrecision as Long

Specifies the vertical precision of the data, in centimeters.

Type	Description
Long	A long expression that specifies the vertical precision of the data, in centimeters.

The VerticalPrecision is the total potential vertical error, rather than a "plus or minus" value. Note that if altitude above or below sea level is used as an approximation for altitude relative to the ellipsoid, the precision value should be adjusted.

LookupNS object

The ExLookupNS COM object is a DNS (Domain Name Service) component that can be used for network diagnosing, troubleshooting, and monitoring. The ExLookpNS allows developers to integrate the DNS protocol message sending capability into their applications. The ExLookupNS's object model is rich, flexible and very intuitive. The ExLookupNS component automatically detects configured DNS servers.

The following sample displays the IP address(es) of the host:

```
Dim n As New LookupNS
MsgBox n.Query("yahoo.com").Address
```

The LookupNS object supports the following properties and methods:

Name	Description
Debug	Retrieves a string for debug purpose.
DefaultServer	Retrieves the default DNS server.
LastError	Retrieves a value that indicates the last error occurred.
LastErrorCode	Retrieves the code of the last error.
Port	Retrieves or sets a value that indicates the port to send query on. By default is 53.
Query	Retrieves a Message object that contains information about the Host.
QueryClass	Retrieves or sets the class of the query.
Separator	Retrieves or sets a value that indicates the string expression used to separate multiple values.
Server	Retrieves or sets a value that indicates the default server.
TimeOut	Specifies the amount of time (in seconds) the control will wait for the server response.

property LookupNS.Debug as Variant

Retrieves a string for debug purpose.

Type	Description
Variant	A string expression that indicates a debugging string.

Only for internal use. The Debug property is implemented only by Debug configuration.

property LookupNS.DefaultServer as String

Retrieves the list of local DNS servers.

Type	Description
String	A string expression that indicates the list of DNS servers.

The DefaultServer property retrieves the list of local DNS servers. The list includes the 'Preferred DNS server' and the 'Alternate DNS server'. The list of servers is delimited by the Separator property. The queries are sent to the DNS Server. Use the Server property to specify a new DNS server.

The following sample displays the "Preferred DNS Server".

```
Dim n As New LookupNS
n.Separator = Chr(0)
MsgBox n.DefaultServer
```

The following sample displays the list of all local DNS servers:

```
Dim n As New LookupNS
MsgBox n.DefaultServer
```

property LookupNS.LastError as String

Retrieves a value that indicates the last error occurred.

Type	Description
String	A string expression that indicates the last error occurred.

If sending the query to a DNS server fails, or the DNS server fails to reply with an answer, the LastError and LastErrorCode properties indicates the error that occurs. The LastErrorCode property gets the code of the last error occurred.

The list of NS errors is:

Code	NS Error Description
32001	The name server was unable to process the query.
32002	The name server was unable to process the query due a problem with the name server.
32003	The host does not exist.
32004	The name server does not support the requested kind of query.
32005	The name server refuses to perform the specified operation for policy reasons

The most frequent error that might appear is 32003 (The host does not exist.).

property LookupNS.LastErrorCode as Long

Retrieves the code of the last error.

Type	Description
Long	A long expression that indicates the code of the last error.

If sending the query to a DNS server fails, or the DNS server fails to reply with an answer, the LastError and LastErrorCode properties indicates the error that occurs. The LastError property gets the description of the last error. Use the LastError or LastErrorCode property to get the last error, if the DNS answer is empty.

For instance, the following sample generates an error, and so the DNS answer is empty:

```
Dim n As New LookupNS
Debug.Print n.Query("micro^soft.com").Address
MsgBox n.LastError
```

The sample generates the error: "The host doesn't not exist. ". In this case, the Address property retrieves an empty string.

property LookupNS.Port as Long

Retrieves or sets a value that indicates the port to send query on.

Type	Description
Long	A long expression that indicates the port being used to query the DNS server.

By default, the Port property is 53. Use the Server property to change the DNS server queried.

property LookupNS.Query (Host as String) as Message

Retrieves a Message object that contains information about the Host.

Type	Description
Host as String	A string expression that indicates the host name or the IP address.
Message	A Message object that contains information about a host.

The Query property prepares the query to be sent to a DNS server. Use the QueryClass property to specify the class of the query being sent to a DNS server. Important note! The query is sent to the DNS Server **only** when one of the Message object properties is accessed.

For instance, the following sample asks the DNS server about the IP address of the host:

```
Dim n As New LookupNS
MsgBox n.Query("microsoft.com").Address
```

The following sample doesn't send a query to the DNS server, because none of the Message object properties is accessed.

```
Dim n As New LookupNS, q As Message
Set q = n.Query("microsoft.com")
```

The following sample sends the query to a DNS server when Address property is called:

```
Dim n As New LookupNS, q As Message
Set q = n.Query("microsoft.com")
MsgBox q.Address
```

property LookupNS.QueryClass as QueryClassEnum

Retrieves or sets the class of the query.

Type	Description
QueryClassEnum	A QueryClassEnum expression that indicates the type of the query being sent to a DNS server.

By default, the QueryClass property is Internet (1). Use the Query property to prepares a query to be sent to a DNS server. The QueryClass property should be called before calling the Query property.

property LookupNS.Separator as String

Retrieves or sets a value that indicates the string expression used to separate multiple values.

Type	Description
String	A string expression that indicates the separator being used in few properties of the Message object.

By default, the Separator property is "\r\n" (vbCrLf). Important Note! In the DEMO version, the Separator property is **not** implemented.

The following sample shows how to get only the first value, if the message contains multiple values:

```
Dim n As New LookupNS
n.Separator = Chr(0)
MsgBox n.Query("microsoft.com").Address
```

The Separator property splits multiple values in the following properties:

- DefaultServer property of the LookupNS object.
- AAAA property of the Message object
- Address property of the Message object
- CanonicalName property of the Message object
- DomainNamePointer property of the Message object
- MailBoxDomainName property of the Message object
- MailDestination property of the Message object
- MailExchange property of the Message object
- MailForwarder property of the Message object
- MailGroupMember property of the Message object
- MailRenameDomainName property of the Message object
- NameServer property of the Message object

property LookupNS.Server as String

Retrieves or sets a value that indicates the default server.

Type	Description
String	A string expression that indicates the DNS being queried.

The Server property defines the DNS server where the queries are sent. By default, the Server property is the preferred DNS server. Use the DefaultServer property to get the preferred DNS server. Use the Port property to specify the port being used. The TimeOut property gets or sets the length of time until the query times out.

The following sample changes the DNS server and queries for a MX records:

```
Dim n As New LookupNS
n.Server = "dns1.cp.msft.net"
MsgBox n.Query("microsoft.com").MailExchange
```

property LookupNS.TimeOut as Long

Specifies the amount of time (in seconds) the control will wait for the server response.

Type	Description
Long	A long expression that indicates the amount of time the control will wait for the server response, in seconds.

By default, the TimeOut property is 5 seconds. Use the Server property to specify a DNS server.

MailInformation object

The MailInformation object holds mail list information. Use the MailInformation property to access the MailInformation object. The MailInformation object handles the MINFO structures described in the RFC 1035. The MailInformation object supports the following properties and methods:

Name	Description
ErrorMailBox	Specifies a mailbox which is to receive error messages related to the mailing list or mailbox.
ResponsibleMailBox	Specifies a mailbox which is responsible for the mailing list or mailbox.

property MailInformation.ErrorMailBox as String

Specifies a mailbox which is to receive error messages related to the mailing list or mailbox.

Type	Description
String	A string expression specifies a mailbox which is to receive error messages related to the mailing list or mailbox.

The ErrorMailBox property retrieves a domain name which specifies a mailbox which is to receive error messages related to the mailing list or mailbox specified by the owner of the MINFO record. If this domain name names the root, errors should be returned to the sender of the message.

property MailInformation.ResponsibleMailBox as String

Specifies a mailbox which is responsible for the mailing list or mailbox.

Type	Description
String	A string expression that specifies a mailbox which is responsible for the mailing list or mailbox.

The ResponsibleMailBox property retrieves a domain name which specifies a mailbox which is responsible for the mailing list or mailbox. If this domain name names the root, the owner of the MINFO record is responsible for itself.

Message object

The Message object holds a DNS response. Use the Query property to get a Message object. The control sends the query to the DNS Server when one of the Message object properties is invoked.

The following sample displays the mail servers responsible for the host, in the mail server preference order:

```
Dim n As New LookupNS
MsgBox n.Query("microsoft.com").MailExchange
```

The Message object supports the following properties and methods:

Name	Description
AAAA	Retrieves the IPv6 address.
Address	Retrieves the host IP address(es). The list is separated by Separator.
CanonicalName	Retrieves a value that specifies the canonical or primary name for the host.
DomainNamePointer	Retrieves a value that indicates the domain name pointer of the host.
HostInformation	Retrieves information about a host.
Location	Retrieves the location where the host is located.
MailBoxDomainName	Retrieves the domain name that specifies a host that has a specified mailbox.
MailDestination	Specifies a host which has a mail agent for the domain which should be able to deliver mail for the domain.
MailExchange	Retrieves a list of mail servers for the Host, ordered by preferences, and separated by Separator.
MailForwarder	Retrieves a domain name which specifies a host which has a mail agent for the domain which will accept mail for forwarding to the domain.
MailGroupMember	Specifies a mailbox which is a member of the mail group specified by the domain name.
MailInformation	Retrieves a mailbox or mail list information.
MailRenameDomainName	Specifies a mailbox which is the proper rename of the specified mailbox.

NameServer	Retrieves the host's name server.
WellKnownService	Retrieves description for a well known service.
ZoneOfAuthority	Specifies the start of the zone of authority for the host.

property Message.AAAA as String

Retrieves the IPv6 address.

Type	Description
String	A string expression that indicates the list of the IPv6 addresses.

The RFC 1886 describes the AAAA records. If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

The following sample displays IPv6 address(es) for the host:

```
Dim n As New LookupNS
MsgBox n.Query("dot.ep.net").AAAA
```

property Message.Address as String

Retrieves the host IP address(es).

Type	Description
String	A string expression that indicates the IP address(es) for the host.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

The following sample displays the IP addresses for the host:

```
Dim n As New LookupNS
MsgBox n.Query("www.microsoft.com").Address
```

property Message.CanonicalName as String

Retrieves a value that specifies the canonical or primary name for the host.

Type	Description
String	A string expression that specifies the canonical or primary name for the host.

The CanonicalName property retrieves a domain name which specifies the canonical or primary name for the host. If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

The following sample displays the alias for the host:

```
Dim n As New LookupNS
MsgBox n.Query("www.microsoft.com").CanonicalName
```

property Message.DomainNamePointer as String

Retrieves a value that indicates the domain name pointer of the host.

Type	Description
String	A string expression that indicates the domain name pointer of the host.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

property Message.HostInformation as HostInformation

Retrieves information about a host.

Type	Description
HostInformation	A HostInformation object that holds information about a host.

Use the HostInformation property to get the CPU or OS of the host.

property Message.Location as Location

Retrieves the location where the host is located.

Type	Description
Location	A Location object that contains the location of the host.

Use the Location property to retrieve the location of the host.

property Message.MailBoxDomainName as String

Retrieves the domain name that specifies a host that has a specified mailbox.

Type	Description
String	A string expression that retrieves the domain name that specifies a host that has a specified mailbox.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

property Message.MailDestination as String

Specifies a host which has a mail agent for the domain which should be able to deliver mail for the domain.

Type	Description
String	A string expression that specifies a host which has a mail agent for the domain which should be able to deliver mail for the domain.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

property Message.MailExchange as String

Retrieves a list of mail servers for the Host, ordered by preferences.

Type	Description
String	A string expression that indicates the list of mail servers for the Host, ordered by preferences.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

The following sample displays the list of mail servers for the host:

```
Dim n As New LookupNS
MsgBox n.Query("ftp.exontrol.net").MailExchange
```

property Message.MailForwarder as String

Retrieves a domain name which specifies a host which has a mail agent for the domain which will accept mail for forwarding to the domain.

Type	Description
String	A string expression that indicates the domain name which specifies a host which has a mail agent for the domain which will accept mail for forwarding to the domain.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

property Message.MailGroupMember as String

Specifies a mailbox which is a member of the mail group specified by the domain name.

Type	Description
String	A string expression that specifies a mailbox which is a member of the mail group specified by the domain name.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

property Message.MailInformation as MailInformation

Retrieves a mailbox or mail list information.

Type	Description
MailInformation	A MailInformation object that holds mail information.

Use the MailInformation property to get the mail information.

property Message.MailRenameDomainName as String

Specifies a mailbox which is the proper rename of the specified mailbox.

Type	Description
String	A string expression that specifies a mailbox which is the proper rename of the specified mailbox.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values.

property Message.NameServer as String

Retrieves the host's name server.

Type	Description
String	A string expression that indicates the host's name servers.

If the DNS response contains multiple values, the Separator property determines the delimiter for the list of values. Important Note! The DEMO version retrieves only one or two name servers for the host. The DEMO version does **not** retrieve the entire list of name servers for the host.

property Message.WellKnownService as WellKnownService

Retrieves description for a well known service.

Type	Description
WellKnownService	A WellKnownService object that holds the description for a well known service.

Use WellKnownService record record is used to describe the well known services supported by a particular protocol on a particular internet address.

property Message.ZoneOfAuthority as ZoneOfAuthority

Specifies the start of the zone of authority for the host.

Type	Description
ZoneOfAuthority	A ZoneOfAuthority object that marks the start of a zone of authority.

The ZoneOfAuthority property handles the SOA records.

WellKnownService object

Use WellKnownService record record is used to describe the well known services (WKS) supported by a particular protocol on a particular internet address. Use the WellKnownService property to access the WKS records. The WellKnownService object supports the following properties and methods:

Name	Description
Address	Retrieves the IP address for the well known service.
Bitmap	Retrieves an array of bytes that are one bit per port for specified protocol.
Protocol	Specifies the protocol number.

property WellKnownService.Address as String

Retrieves the IP address for the well known service.

Type	Description
String	A string expression that indicates the IP address for a well known service.

The WKS record is used to describe the well known services supported by a particular protocol on a particular internet address. The Protocol property specifies an IP protocol number, and the Bitmap property has one bit per port of the specified protocol.

property WellKnownService.Bitmap as SAFEARRAY FAR*

Retrieves an array of bytes that are one bit per port for specified protocol.

Type	Description
SAFEARRAY FAR*	A safe array of bytes that are one bit per port for specified protocol.

The WKS record is used to describe the well known services supported by a particular protocol on a particular internet address. The Protocol property specifies an IP protocol number, and the Bitmap property has one bit per port of the specified protocol.

property WellKnownService.Protocol as Long

Specifies the protocol number.

Type	Description
Long	A long expression that indicates the protocol number.

The WKS record is used to describe the well known services supported by a particular protocol on a particular internet address. The Protocol property specifies an IP protocol number, and the Bitmap property has one bit per port of the specified protocol.

ZoneOfAuthority object

The ZoneOfAuthority object handles the SOA records. The SOA record marks the start of a zone of authority. Use the ZoneOfAuthority property to access the SOA records. The ZoneOfAuthority object supports the following properties and methods:

Name	Description
Expire	Retrieves the time value that specifies the upper limit on the time interval that can elapse before the zone is no longer authoritative.
MailboxServerName	Specifies the mailbox of the person responsible for this zone.
Minimum	Specifies the time to live for this record.
PrimaryNameServer	Specifies the name server that was the original or primary source of data for this zone.
Refresh	Specifies the time interval before the zone should be refreshed.
Retry	Specifies the time interval that should elapse before a failed refresh should be retried.
Serial	Specifies the version number of the original copy of the zone. Zone transfers preserve this value. This value wraps and should be compared using sequence space arithmetic.

property ZoneOfAuthority.Expire as Long

Retrieves the time value that specifies the upper limit on the time interval that can elapse before the zone is no longer authoritative.

Type	Description
Long	A long expression that indicates the time value that specifies the upper limit on the time interval that can elapse before the zone is no longer authoritative.

The Expire property handles the EXPIRE field of the SOA record.

property ZoneOfAuthority.MailboxServerName as String

Specifies the mailbox of the person responsible for this zone.

Type	Description
String	A string expression that specifies the mailbox of the person responsible for this zone.

The MailBoxServerName property handles the RNAME field of the SOA record.

property ZoneOfAuthority.Minimum as Long

Specifies the time to live for this record.

Type	Description
Long	A long expression that indicates the time to live for this record.

The Minimum property handles the MINIMUM field of the SOA record.

property ZoneOfAuthority.PrimaryNameServer as String

Specifies the name server that was the original or primary source of data for this zone.

Type	Description
String	A string expression that specifies the name server that was the original or primary source of data for this zone.

The PrimaryNameServer property handles the MNAME field of the SOA record.

property ZoneOfAuthority.Refresh as Long

Specifies the time interval before the zone should be refreshed.

Type	Description
Long	A long expression that specifies the time interval before the zone should be refreshed.

The Refresh property handles the REFRESH field of the SOA record.

property ZoneOfAuthority.Retry as Long

Specifies the time interval that should elapse before a failed refresh should be retried.

Type	Description
Long	A long expression that indicates the time interval that should elapse before a failed refresh should be retried.

The Retry property handles the RETRY field of the SOA record.

property ZoneOfAuthority.Serial as Long

Specifies the version number of the original copy of the zone.

Type	Description
Long	A long expression that indicates the version number of the original copy of the zone.

Zone transfers preserve this value. This value wraps and should be compared using sequence space arithmetic. The Serial property handles the SERIAL field of the SOA record.