EASYNET 1.81

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EasyNet is a Custom Control for Microsoft Visual Basic for Windows (*). It lets you quickly build flowchart-enabled applications (network, workflow, database, etc...).

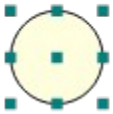
Quick Start

- **Add the EasyNet VBX** to your project by selecting "Add File..." from Visual Basic's "File" menu. If you have not a license file, an "About" dialog box appears and you have to click Ok.

- **Drag an EasyNet control** from the toolbox to your form.

- **Launch** the program by selecting "Start" from the "Run" menu (or do F5).

- **Draw a node**: bring the mouse cursor into the EasyNet control, press the left button, move the mouse and release the left button. You have created an elliptic node. This node is selected: that's why 9 handles (little squares) are displayed.

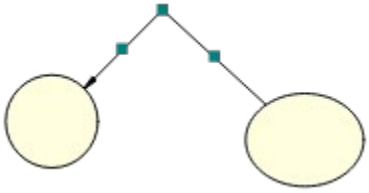


The handle at the center of the node is used to draw a link. The 8 others allow to **resize the node**. If you want to **move the node** you bring the mouse cursor into the node, press the left button, move the mouse and release the left button.

- **Draw a second node**...(same method)

- **Draw a link**: bring the mouse cursor into the handle at the center of the selected node, press the left button, move the mouse towards the other node. When the mouse cursor is into the other node, release the left button. The link has been created. And it is selected since a handle is displayed at the center of this link.

- **You may stretch this link**: bring the mouse cursor into the link handle, press the left button, move the mouse and release the left button. You have created a new link segment. It has 3 handles allowing you to add or remove segments. (The handle at the intersection of two segments allows you to remove a segment : you move it with the mouse so that the two segments are aligned and when these two segments are approximately aligned, release the left button).

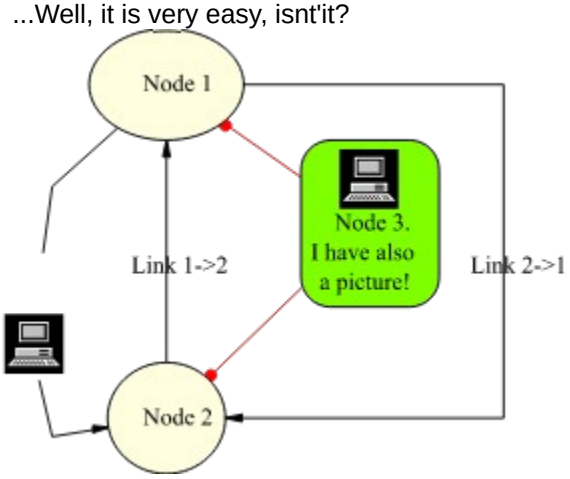


- **Now, you may return to the Visual Basic design-time mode** in order to change EasyNet control

properties. For instance you may change the node filling color with FillColor property, the node shape (Shape property), the drawing color (DrawColor property). You may allow **multiselection** (MultiSel and SelectMode properties), add scrollbars (ScrollBars property), etc...

You may also create items programmaticaly with EditAction property. Or copy the diagram to clipboard as a metafile, save its image to a file as a metafile, zoom the diagram, etc....

...Well, it is very easy, isnt'it?



Why EasyNet?

If you need flowcharting features
If you want to implement a workflow applications
If you wish to draw organizational charts
If you have to draw communication networks
If you plan to draw state transitions diagrams
If you need to display relationships between entities (database diagrams)

then EasyNet is indispensable. GET IT!!

It allows you to draw diagrams interactively or programmaticaly in minutes.

EasyNet is powerful, opened and customizable:

- *allows to associate your own data to each item (node or link).*
- *allows navigation.*
- *offers many properties allowing you to "customize" your diagramming application.*
- *is a VBX 1.0 level control. Therefore, it can be used in other host environments.*
- *includes Royalty free runtime distribution*
- *only $119 !!*

Overview

This Custom Control allows to draw network diagrams. A network diagram is a set of nodes that can be linked. So an EasyNet control contains items that can be nodes or links. You can associate data to each item and you can navigate in the network diagram.

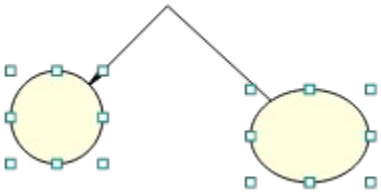
Drawings can be made interactively with the mouse or programmaticaly. See Quick Start to see how to interactively draw nodes, resize nodes, move nodes, stretch links, select one item or multiselect items.

By exploring following topics, you'll discover all features of the EasyNet control.

Items

Items are nodes or links. Two nodes can be linked with a link. A link cannot exist without its origin and destination nodes. If one of these two nodes is deleted, the link is also deleted.

You can make an item be the current one either with the mouse or with Item property, allowing you to work with it, get or set its properties. You can also select several items with the mouse if multiselection is allowed (in such a case MultiSel and SelectMode properties are true).



IsLink property allows to know if current item is a link or not.

Sleeping property allows to specify if an item is active or not. If it sleeps, the user cannot interactively make it current or selected.

Owner property allows to define an owner node for a node. When a node is created, it is free and its Owner property is 0. But if you set its Owner property, then the node will have to follow its owner node when it will be interactively moved with the mouse by the user. A node may have several owned nodes that follow it. And if those owned nodes are sleeping, they may be used to implement stubs or pins inside the owner node. Their role is just to receive links.

A link may have several segments but the first segment is always directed towards the center of the origin node and the last segment is always directed towards the center of the destination node. However, this behaviour may be changed with Owner property.

You can create items, delete items and do other edit actions (like copying the network diagram onto the clipboard in a metafile format) with EditAction property.

ItemZOrder places current item at the front or back of the z-order.

Example:*If current item is a link, make its origin node be red.*

```
Dim curLink&

If Net1.IsLink = True Then
  ' Save current item
  curLink = Net1.Item

  ' Make origin node be the current item
  ' in order to work with it
  Net1.Item = Net1.Org

  ' Change node filling color
  Net1.FillColor = RGB(255, 0, 0)

  ' Restore current item
  Net1.Item = curLink
End If
```

Drawing

You can change colors, styles and shapes of each item:

- X1, X2, Y1, Y2 properties allows to set or get position and size of each item.
- Picture property allows to associate a picture to each node.
- AutoSize property allows to adjust node size to picture size or adjust picture size to node size.
- Shape property allows to specify a shape for a node.
- DrawColor, DrawStyle and DrawWidth properties allow to specify the color and width of the pen used to draw nodes or links.
- FillColor property allows to specify the color used inside a node.
- ForeColor property allows to specify the item text color.
- Text property associates a string that is displayed inside the node at a position depending on Alignment property (if item is a node) or near the link (if item is a link).
  The EasyNet control maintains the memory for the strings associated to items.
- Alignment sets or returns the alignment of text in a node.
- PointCount, PointX, PointY properties allow to have a link composed of several segments.
- Oriented property specifies if a link is oriented or not.
  If the link is oriented, it has an arrowhead.
- LinkHead property the arrowhead shape for a link.
- Transparent property specifies if a node is transparent or not.
- Hiding property specifies if an item (node or link) is visible or not.
- You can create items, delete items and do other edit actions (like copying the network diagram onto the clipboard in a metafile format) with EditAction property.

Example:

Creates 3 nodes and 2 links. Each node has a text. Two are rectangles and the other is an ellipse. The links are oriented.

```
Sub Exercice ()
  Dim n1&, n2&, n3&

  ' Cause current item to be null
  ' Therefore, following property settings apply
  ' to next created items.
  Net1.Item = 0
  Net1.Shape = 1  'Default shape = Rectangle.
  Net1.FillColor = RGB(255, 255, 192) 'Default Fill color
  Net1.DrawColor = RGB(0, 0, 128)     'Default Draw color
  Net1.Oriented = True                'Oriented links

  ' Create first node. It has a rectangular shape.
  Net1.EditAction = 0
  Net1.X1 = 100
  Net1.Y1 = 100
  Net1.X2 = 2000
```

```
 Net1.Y2 = 500
 Net1.Text = "A network to implement ?"
 n1 = Net1.Item

 ' Create second node. It has a rectangular shape.
 Net1.EditAction = 0
 Net1.X1 = 2200
 Net1.Y1 = 300
 Net1.X2 = 3600
 Net1.Y2 = 700
 Net1.Text = "FlowChart needs ?"
 n2 = Net1.Item

 ' Create a third node. No shape is indicated.
 ' Therefore its shape is the default one: ellipse.
 Net1.EditAction = 0
 Net1.Shape = 0 ' Ellipse
 Net1.X1 = 1100
 Net1.Y1 = 1500
 Net1.X2 = 3000
 Net1.Y2 = 2000
 Net1.Text = "Use EasyNet.vbx !!"
 n3 = Net1.Item

 ' Create first link
 Net1.Org = n1
 Net1.Dst = n3
 Net1.EditAction = 1

 ' Create second link with an extra point (2 segments)
 Net1.Org = n2
 Net1.Dst = n3
 Net1.EditAction = 1
 Net1.PointCount = 1
 Net1.PointX(0) = 3200
 Net1.PointY(0) = 1000

 ' Unselect last created link
 Net1.Item = 0
End Sub
```

Metafile support

EasyNet offers a perfect metafile support:

- **Metafile copy**: you may copy an EasyNet diagram onto the clipboard and paste it in Window Write, in PaintBrush, Excel, Winword, WordPerfect, in a VB picture, etc... And the result can be resized. For instance, you may paste the metafile in a Winword document, double-click on the picture, adjust the margins so that there's room for other drawing objects, use the drawing tools to draw some lines, circles, etc, close the picture, select it, copy it to the clipboard, etc...

- **Metafile save**: you may save an image of your EasyNet diagram on disk as a metafile.

User Data Association

You can associate data to each item (node or link) with following properties:

- ItemTag property associates a string that is NOT displayed.
  The EasyNet control maintains the memory for the tags associated to items.
  This tag can be used to store user data.
- Data property associates a long integer that can be used to store a reference to a user data.
- Type property associates an integer that can be used to store an identifier or a type.

Navigation

You can navigate in the network diagram with the three following properties:

- LoopAction property has to be called first in order to indicate the type of navigation to perform.
- Then, a call to LoopCount gives the count of items involved in this navigation.
- Then, you get each item with LoopItem property.

LoopScope property allows to apply item property settings to all items involved in the loop.

You can retrieve origin and destination node of a link with Org and Dst properties.

Oriented property specifies if a link is oriented or not.

Example:
Makes color of all "out" links of all selected nodes be red.
Two calls to LoopAction property cannnot be cascaded so you have first to memorize the selected nodes in an array in order to work with them.

```
Sub Exercice ()
  Dim nbnode%, nblink%, i%, j%
  Dim Node() As Long

  ' Do a loop with selected nodes
  Net1.LoopAction = 2

  ' Get count of selected nodes
  nbnode = Net1.LoopCount

  ' If no selected nodes, nothing to do
  If nbnode = 0 Then Exit Sub

  ' Memorize selected nodes in a dynamic array.
  ReDim Node(1 To nbnode)
  For i = 1 To nbnode
    Node(i) = Net1.LoopItem(i - 1)
  Next i

  ' For each node of our array...
  For i = 1 To nbnode
    ' ... makes it be the current item
    Net1.Item = Node(i)

    ' Do a loop with all leaving (out) links of the current node
    Net1.LoopAction = 4

    ' Get count of selected nodes
    nblink = Net1.LoopCount

    ' For each link leaving the current node...
    For j = 1 To nblink
      Net1.Item = Net1.LoopItem(j - 1)
      Net1.DrawColor = RGB(255, 0, 0)
    Next j
  Next i
```

```
 ' Don't forget to delete the array
 Erase Node
End Sub
```

Capabilities

Following properties allow to set capabilities for an EasyNet control:

- AutoScroll
- CanDrawNode
- CanDrawLink
- CanMoveNode
- CanSizeNode
- CanStretchLink
- CanMultiLink
- DisplayHandles
- DoAddLink
- DoAddNode
- DoChange
- DoSelChange
- MultiSel
- ReadOnly
- ScrollBars
- ShowGrid
- xGrid
- yGrid
- Zoom

Saving/Loading

Saving an EasyNet diagram is under the responsability of the VB application that uses an EasyNet control. The ImageFile property used in conjunction with EditAction property only allows to save an image of the EasyNet diagram. This image file can be used by other drawing applications but it cannot be loaded up again by EasyNet.

You may see demonet1 sample that is supplied with the package in order to see a way to save an EasyNet diagram. It is just an example. You may use another method or/and save more or less properties for each item. You may use a sequential, a binary or a random file format. Let us give another example using a sequential file. You may copy this code into clipboard and paste it in one of your application modules.

Example:

```
' ------------------------------------------------------------------
'  This procedure saves an EasyNet diagram in a sequential file.
'  It saves:
' - the version number
' - the nodes count
' - the links count
' - every properties of each node (except Picture property)
' - every properties of each link.
'
'  Picture property is not saved but you may instead manage
' a correspondance between node types and pictures. For
' instance when you load your file, your VB application knows
' that node of type 1 have one icon, nodes of type 2 have another
' icon, etc...
'
'  This program is just an example to show how an EasyNet file
' may be saved to disk.
'  Properties that applied to the whole diagram like FontSize or
' FontName are not saved here.
'  You may proceed differently: for instance, use a binary or
' a random file and save only the properties you need for your
' application.
'  You may consider this program as a starting point to write
' your EasyNet saving/loading procedures adapted to your needs.
'
' THE CODE PROVIDED HEREUNDER IS PROVIDED AS IS WITHOUT WARRANTY
' OF ANY KIND.
' ------------------------------------------------------------------
'
' Following type is used for loading only.
Type ItemRec
  Type As Integer
  Data As Long
  FillColor As Long
  ForeColor As Long
  DrawColor As Long
  DrawWidth As Integer
  DrawStyle As Integer
  Sleeping As Integer
  Hiding As Integer
  ItemTag As String
  Text As String
```

```
  Shape As Integer
  Transparent As Integer
  Alignment As Integer
  AutoSize As Integer
  X1 As Long
  Y1 As Long
  X2 As Long
  Y2 As Long
  Oriented As Integer
  LinkHead As Integer
  OwnerNode As Long
  SrcNode As Long
  DstNode As Long
  Points As Integer
End Type

Sub SaveEasyNetFile (Net1 As Control, Filename$)
  Dim i%, j%, length%, NodeCount%, LinkCount%, PointCount%
  Dim TextLength%, TagLength%
  Dim Text$, ItemTag$, s$, CR$
  Dim node() As Long
  Dim nodeId As Long
  Dim Owner As Long
  Dim Org As Long
  Dim Dst As Long
  Dim l As Long
  Dim ptx() As Long
  Dim pty() As Long
  Dim Item As Long

  CR = Chr$(13)

  Open Filename For Output As 1
  Print #1, "EASYNET VERSION = " + Format$(Net1.Version)

  ' Node count
  Net1.LoopAction = 0
  NodeCount = Net1.LoopCount
  Print #1, "Nodes = " + Format$(NodeCount)

  ' Link count
  Net1.LoopAction = 1
  LinkCount = Net1.LoopCount

  Print #1, "Links = " + Format$(LinkCount)

  If NodeCount = 0 Then
    Close
    Exit Sub
  End If

  ' Allocate array to store nodes identifier. This array will be used
  ' when saving links or owner nodes.
  ReDim node(1 To NodeCount)
```

```
' For each node, save its identifier in an array
Net1.LoopAction = 0           ' Do a nodes loop
For i = 1 To NodeCount
  node(i) = Net1.LoopItem(i - 1)
Next

'-----------
' Save nodes
'-----------

' For each node:
'   - make it the current one
'   - save its properties in the file

For i = 1 To NodeCount

  ' Make node the current item
  Net1.Item = node(i)

  ' Get text and its length
  Text = Net1.Text
  TextLength = Len(Text)

  ' Get tag and its length
  ItemTag = Net1.ItemTag
  TagLength = Len(ItemTag)

  ' Find owner
  Owner = 0
  nodeId = Net1.Owner
  For j = 1 To NodeCount
    If node(j) = nodeId Then
      Owner = j
      Exit For
    End If
  Next

  ' Save current node properties
  Print #1, "Begin Node " + Format$(i)
  Print #1, "  Owner = " + Format$(Owner)
  Print #1, "  Type = " + Net1.Type
  Print #1, "  Data = " + Net1.Data
  Print #1, "  ForeColor = " + Net1.ForeColor
  Print #1, "  FillColor = " + Net1.FillColor
  Print #1, "  DrawColor = " + Net1.DrawColor
  Print #1, "  DrawWidth = " + Net1.DrawWidth
  Print #1, "  DrawStyle = " + Net1.DrawStyle
  Print #1, "  Transparent = " + Net1.Transparent
  Print #1, "  Alignment = " + Net1.Alignment
  Print #1, "  AutoSize = " + Net1.AutoSize
  Print #1, "  Shape = " + Net1.Shape
  Print #1, "  X1 = " + Net1.X1
  Print #1, "  Y1 = " + Net1.Y1
  Print #1, "  X2 = " + Net1.X2
  Print #1, "  Y2 = " + Net1.Y2
```

```
  Print #1, "  Sleeping = " + Net1.Sleeping
  Print #1, "  Hiding = " + Net1.Hiding
  If TextLength > 0 Then
    s = Text
    length = InStr(s, CR)
    While length > 0
      Print #1, "  Text = " + Left$(s, length - 1)
      s = Mid$(s, length + 2)
      length = InStr(s, CR)
    Wend
    Print #1, "  Text = " + s
  End If
  If TagLength > 0 Then
    s = ItemTag
    length = InStr(s, CR)
    While length > 0
      Print #1, "  ItemTag = " + Left$(s, length - 1)
      s = Mid$(s, length + 2)
      length = InStr(s, CR)
    Wend
    Print #1, "  ItemTag = " + s
  End If
  Print #1, "End"
Next i

'-----------
' Save links
'-----------

Net1.LoopAction = 1  ' Do a links loop

' For each link:
'   - make it the current one
'   - find its origin and destination nodes
'   - save its properties in the file

For i = 1 To LinkCount
  ' Make link the current item
  Net1.Item = Net1.LoopItem(i - 1)

  ' Find origin
  Org = 0
  nodeId = Net1.Org
  For j = 1 To NodeCount
    If node(j) = nodeId Then
      Org = j
      Exit For
    End If
  Next

  ' Find destination
  Dst = 0
  nodeId = Net1.Dst
  For j = 1 To NodeCount
    If node(j) = nodeId Then
```

```
    Dst = j
    Exit For
  End If
Next

' Get text and its length
Text = Net1.Text
TextLength = Len(Text)

' Get tag and its length
ItemTag = Net1.ItemTag
TagLength = Len(ItemTag)

' Get Number of points
PointCount = Net1.PointCount

' Get points
If PointCount > 0 Then
  ReDim ptx(0 To PointCount - 1)
  ReDim pty(0 To PointCount - 1)
  For l = 0 To PointCount - 1
    ptx(l) = Net1.PointX(l)
    pty(l) = Net1.PointY(l)
  Next
End If

' Save current link properties
Print #1, "Begin Link " + Format$(i)
Print #1, "  Type = " + Net1.Type
Print #1, "  Data = " + Net1.Data
Print #1, "  ForeColor = " + Net1.ForeColor
Print #1, "  DrawColor = " + Net1.DrawColor
Print #1, "  DrawWidth = " + Net1.DrawWidth
Print #1, "  DrawStyle = " + Net1.DrawStyle
Print #1, "  Oriented = " + Net1.Oriented
Print #1, "  LinkHead = " + Net1.LinkHead
Print #1, "  Src = " + Format$(Org)
Print #1, "  Dst = " + Format$(Dst)
Print #1, "  Sleeping = " + Net1.Sleeping
Print #1, "  Hiding = " + Net1.Hiding
Print #1, "  Points = " + Format$(PointCount)
If PointCount > 0 Then
  For l = 0 To PointCount - 1
    Print #1, "    " + Format$(ptx(l)) + "," + Format$(pty(l))
  Next
End If
If TextLength > 0 Then
  s = Text
  length = InStr(s, CR)
  While length > 0
    Print #1, "  Text = " + Left$(s, length - 1)
    s = Mid$(s, length + 2)
    length = InStr(s, CR)
  Wend
  Print #1, "  Text = " + s
```

```
    End If
    If TagLength > 0 Then
      s = ItemTag
      length = InStr(s, CR)
      While length > 0
        Print #1, "  ItemTag = " + Left$(s, length - 1)
        s = Mid$(s, length + 2)
        length = InStr(s, CR)
      Wend
      Print #1, "  ItemTag = " + s
    End If
    Print #1, "End"
  Next i

  Erase node
  Erase ptx
  Erase pty

  ' Close file
  Close
End Sub

'-----------------------------------------------------
' (See comment of SaveEasyNetFile subroutine.)
'-----------------------------------------------------
'
Sub OpenEasyNetFile (Net1 As Control, Filename$)
  Dim s$, value$, keyword$, CRLF$
  Dim length%, i%, NodeCount%, LinkCount%
  Dim Version As Variant
  Dim ir As ItemRec
  Dim l As Long
  Dim ptx() As Long
  Dim pty() As Long
  Dim node() As Long
  Dim Owner() As Integer

  CRLF = Chr$(13) + Chr$(10)

  Open Filename For Input As #1

  Line Input #1, s  ' Version
  Version = Val(Mid$(s, InStr(s, "=") + 1))
  If Version <> Net1.Version Then
    MsgBox "File created by another EasyNet version!"
    Beep
    Exit Sub
  End If

  ' Node count
  Line Input #1, s
  NodeCount = Val(Mid$(s, InStr(s, "=") + 1))

  ' Link count
  Line Input #1, s
```

```
LinkCount = Val(Mid$(s, InStr(s, "=") + 1))

If NodeCount = 0 Then
  Close
  Exit Sub
End If

ReDim node(1 To NodeCount)
ReDim Owner(1 To NodeCount)

' Load all nodes
For i = 1 To NodeCount
  Line Input #1, s  ' Skip Begin keyword
  length = InStr(s, " ")
  keyword = Left$(s, length - 1)

  If keyword = "Begin" Then
    Net1.Item = 0

    ' Default values
    ir.Type = 0
    ir.Data = 0
    ir.ItemTag = ""
    ir.Text = ""
    ir.ForeColor = Net1.ForeColor
    ir.FillColor = Net1.FillColor
    ir.DrawColor = Net1.DrawColor
    ir.DrawWidth = Net1.DrawWidth
    ir.DrawStyle = Net1.DrawStyle
    ir.Sleeping = Net1.Sleeping
    ir.Hiding = Net1.Hiding
    ir.Shape = Net1.Shape
    ir.Alignment = Net1.Alignment
    ir.AutoSize = Net1.AutoSize
    ir.Transparent = Net1.Transparent
    ir.X1 = 0
    ir.Y1 = 0
    ir.X2 = 0
    ir.Y2 = 0
    ir.OwnerNode = 0

    Do
     Line Input #1, s  ' Skip Begin keyword
     s = LTrim$(s)
     length = InStr(s, " ")
     If length > 0 Then
       keyword = Left$(s, length - 1)
     Else
       keyword = s
     End If
     If keyword = "End" Then
       Exit Do
     End If
     value = Mid$(s, length + 2)
```

```
 ' Load each node property
 Select Case keyword
 Case "Type"
   ir.Type = Val(value)
 Case "Data"
   ir.Data = Val(value)
 Case "FillColor"
   ir.FillColor = Val(value)
 Case "ForeColor"
   ir.ForeColor = Val(value)
 Case "DrawColor"
   ir.DrawColor = Val(value)
 Case "DrawWidth"
   ir.DrawWidth = Val(value)
 Case "DrawStyle"
   ir.DrawStyle = Val(value)
 Case "Sleeping"
   ir.Sleeping = Val(value)
 Case "Hiding"
   ir.Hiding = Val(value)
 Case "Transparent"
   ir.Transparent = Val(value)
 Case "Alignment"
   ir.Alignment = Val(value)
 Case "AutoSize"
   ir.AutoSize = Val(value)
 Case "Shape"
   ir.Shape = Val(value)
 Case "X1"
   ir.X1 = Val(value)
 Case "X2"
   ir.X2 = Val(value)
 Case "Y1"
   ir.Y1 = Val(value)
 Case "Y2"
   ir.Y2 = Val(value)
 Case "Owner"
   ir.OwnerNode = Val(value)
 Case "ItemTag"
   If ir.ItemTag = "" Then
     ir.ItemTag = value
   Else
     ir.ItemTag = ir.ItemTag + CRLF + value
   End If
 Case "Text"
   If ir.Text = "" Then
     ir.Text = value
   Else
     ir.Text = ir.Text + CRLF + value
   End If
 End Select
Loop

' Create Node
Net1.EditAction = 0
```

```
    ' For each node, store its identifier
    ' (will be used for links loading and for owner nodes)
    node(i) = Net1.Item

    Owner(i) = ir.OwnerNode

    Net1.Type = ir.Type
    Net1.Data = ir.Data
    Net1.FillColor = ir.FillColor
    Net1.ForeColor = ir.ForeColor
    Net1.DrawColor = ir.DrawColor
    Net1.DrawWidth = ir.DrawWidth
    Net1.DrawStyle = ir.DrawStyle
    Net1.Hiding = ir.Hiding
    Net1.Alignment = ir.Alignment
    Net1.AutoSize = ir.AutoSize
    Net1.Shape = ir.Shape
    Net1.Transparent = ir.Transparent
    Net1.X1 = ir.X1
    Net1.Y1 = ir.Y1
    Net1.X2 = ir.X2
    Net1.Y2 = ir.Y2
    Net1.ItemTag = ir.ItemTag
    Net1.Text = ir.Text
    Net1.Sleeping = ir.Sleeping   ' Must be last setting
  End If
Next i

' Manage owner nodes
For i = 1 To NodeCount
  Net1.Item = node(i)
  If Owner(i) <> 0 Then
    Net1.Owner = node(Owner(i))
  End If
Next i

' List of link
For i = 1 To LinkCount
  Line Input #1, s  ' Skip Begin keyword
  length = InStr(s, " ")
  keyword = Left$(s, length - 1)

  If keyword = "Begin" Then
    Net1.Item = 0

    ' Default values
    ir.Type = 0
    ir.Data = 0
    ir.ItemTag = ""
    ir.Text = ""
    ir.ForeColor = Net1.ForeColor
    ir.DrawColor = Net1.DrawColor
    ir.DrawWidth = Net1.DrawWidth
    ir.DrawStyle = Net1.DrawStyle
```

```
ir.Sleeping = Net1.Sleeping
ir.Hiding = Net1.Hiding
ir.Oriented = Net1.Oriented
ir.LinkHead = Net1.LinkHead
ir.SrcNode = 0
ir.DstNode = 0
ir.Points = 0

Do
 Line Input #1, s  ' Skip Begin keyword

 s = LTrim$(s)
 length = InStr(s, " ")
 If length > 0 Then
   keyword = Left$(s, length - 1)
 Else
   keyword = s
 End If
 If keyword = "End" Then
   Exit Do
 End If
 value = Mid$(s, length + 2)

 ' Load each link property
 Select Case keyword
 Case "Type"
   ir.Type = Val(value)
 Case "Data"
   ir.Data = Val(value)
 Case "ForeColor"
   ir.ForeColor = Val(value)
 Case "DrawColor"
   ir.DrawColor = Val(value)
 Case "DrawWidth"
   ir.DrawWidth = Val(value)
 Case "DrawStyle"
   ir.DrawStyle = Val(value)
 Case "Sleeping"
   ir.Sleeping = Val(value)
 Case "Hiding"
   ir.Hiding = Val(value)
 Case "Oriented"
   ir.Oriented = Val(value)
 Case "LinkHead"
   ir.LinkHead = Val(value)
 Case "ItemTag"
   If ir.ItemTag = "" Then
     ir.ItemTag = value
   Else
     ir.ItemTag = ir.ItemTag + CRLF + value
   End If
 Case "Text"
   If ir.Text = "" Then
     ir.Text = value
   Else
```

```
          ir.Text = ir.Text + CRLF + value
        End If
      Case "Src"
        ir.SrcNode = node(Val(value))
      Case "Dst"
        ir.DstNode = node(Val(value))
      Case "Points"
        ir.Points = Val(value)

        ' Get points
        If ir.Points > 0 Then
          ReDim ptx(0 To ir.Points - 1)
          ReDim pty(0 To ir.Points - 1)
          For l = 0 To ir.Points - 1
            Line Input #1, s  ' Read point
            s = LTrim$(s)
            length = InStr(s, ",")
            ptx(l) = Val(Left$(s, length - 1))
            pty(l) = Val(Mid$(s, length + 1))
          Next l
        End If
      End Select
    Loop

    ' Set origin and destination nodes for next created link
    Net1.Org = ir.SrcNode
    Net1.Dst = ir.DstNode

    ' Create Link
    Net1.EditAction = 1

    Net1.Type = ir.Type
    Net1.Data = ir.Data
    Net1.ForeColor = ir.ForeColor
    Net1.DrawColor = ir.DrawColor
    Net1.DrawWidth = ir.DrawWidth
    Net1.DrawStyle = ir.DrawStyle
    Net1.Hiding = ir.Hiding
    Net1.Oriented = ir.Oriented
    Net1.LinkHead = ir.LinkHead
    Net1.ItemTag = ir.ItemTag
    Net1.Text = ir.Text
    Net1.PointCount = ir.Points
    For l = 0 To ir.Points - 1
      Net1.PointX(l) = ptx(l)
      Net1.PointY(l) = pty(l)
    Next l
    Net1.Sleeping = ir.Sleeping  ' Must be last setting
  End If
Next i

' Erase dynamic arrays
Erase ptx
Erase pty
Erase node
```

```
  Erase Owner

  ' Close file
  Close
End Sub
```

Performance tuning

Setting following properties to False allows to increase speed dramatically:

- DoAddLink
- DoAddNode
- DoChange
- DoSelChange
- Repaint
- CheckItem

Example:

You may insert this portion of code each time you need to do a time consuming task like saving an EasyNet diagram or navigating in the diagram.

```
' Setting those properties to False improve speed
  Net1.Repaint = False
  Net1.DoChange = False
  Net1.DoSelChange = False
  Net1.DoAddNode = False
  Net1.DoAddLink = False
  Net1.CheckItem = False
```

When you have terminated your task, you may reset those properties to True.

```
  Net1.Repaint = True
  Net1.DoChange = True
  Net1.DoSelChange = True
  Net1.DoAddNode = True
  Net1.DoAddLink = True
  Net1.CheckItem = True
```

Limits

For one EasyNet control:

- the maximum number of items (nodes + links) is **16376**.
- the maximum number of link points is **254**.
  (therefore, the maximum number of link segments is **255**).

For each item, the Text setting is approximately **65,500** characters. (same setting for ItemTag property).

Remark: If your application using EasyNet has been generated without license file, then the control will be limited to 20 items instead of 16376.

Properties

All the properties are listed below. Properties that apply only to the EasyNet Custom Control, or require special consideration when used with it, are underlined. They are documented in this help file. See the Visual Basic *Language Reference* or online Help for documentation of the remaining properties.

(About)	Alignment	BackColor	AutoScroll
AutoSize	BackPicture	BorderStyle	Caption
CanDrawNode	CanDrawLink	CanMoveNode	CanSizeNode
CanStretchLink	CanMultiLink	CheckItem	CtlName
DisplayHandles	DoAddLink	DoAddNode	DoChange
DoSelChange	Data	Dst	DragIcon
DragMode	DrawColor	DrawStyle	DrawWidth
EditAction	Enabled	FillColor	FontBold
FontItalic	FontName	FontSize	FontStrike
FontUnder	ForeColor	Height	HelpContextId
Hiding	Hwnd	ImageFile	Index
IsLink	Item	ItemTag	ItemZOrder
Left	LinkHead	LoopAction	LoopCount
LoopItem	LoopScope	MousePointer	MultiSel
Oriented	Org	Owner	Parent
Picture	PointCount	PointedArea	PointedItem
PointX	PointY	ReadOnly	Repaint
ShowGrid	ScrollBars	SelectMode	Shape
Sleeping	TabIndex	TabStop	Tag
Text	Top	Transparent	Type
Version	Visible	Width	X1
X2	xGrid	xScroll	Y1
Y2	yGrid	yScroll	Zoom

Events

All the events are listed below. Events that apply only to the EasyNet Custom Control, or require special consideration when used with it, are underlined. They are documented in this help file. See the Visual Basic *Language Reference* or online Help for documentation of the remaining events.

AddLink	AddNode	Change	Click
DblClick	DragDrop	DragOver	ErrSpace
GotFocus	KeyDown	KeyPress	KeyUp
LostFocus	MouseDown	MouseMove	MouseUp
SelChange			

EditAction Property

Description

Specifies an action that applies to selected items or that allows to select or unselect items.

Not available at design time; write only at run time.

Usage

[*form*.]*NET*.**EditAction**[= *setting*]

Settings

The EditAction property settings are:

Setting	Description
0	create a node
1	create a link
2	delete selected nodes (and their links)
3	select all nodes.
4	unselect.
5	copy selected nodes onto the clipboard in a metafile format.
6	clear network diagram (all items are deleted)
7	copy all the diagram onto the clipboard in a metafile format.
8	the image of the diagram is written to disk as a metafile (.WMF). For this option to work, the ImageFile property must be set to provide a name for the file.

Data Type

Integer (enumerated)

Remarks

Link creation: The link that is created when setting EditAction to 1 is a link that links the nodes specified by Org and Dst properties. If one of this node is not valid, the link is not created.

Selection: Only nodes can be selected.by the user.

Delete: When a node is deleted, all its links are also deleted. A link cannot exist without its origin and destination nodes. If one of these two nodes is deleted, the link is also deleted.

See Also

Drawing

FillColor Property

Description

If current item is 0, sets or returns the "current" filling node color (the filling color used for next created nodes).
If current item is a node, sets or returns its color (the color with which the node is filled).
If current item is a link, writing has no effect and reading returns 0.
If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.
This property has no effect if Transparent property is set.

Usage

[*form*.]*NET*.**FillColor**[= *color &*]

Settings

The FillColor property settings are:

Setting	Description
Normal RGB Colors	Color set with RGB or QBColor function in code
System Default Colors	Colors specified with the system color constants from CONSTANT.TXT, a Visual Basic file that you can load into a project's global module. Window's substitutes the user's choices, as specified through the user's Control Panel Settings.

By default, FillColor is set to 0 (black)

Data Type

Long

See Also

Drawing

ForeColor Property

Description

If current item is 0, sets or returns the "current" item text color (the text color used for next created items).
If current item is not 0, sets or returns its text color.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**ForeColor**[= *color &*]

Settings

The ForeColor property settings are:

Setting	Description
Normal RGB Colors	Color set with RGB or QBColor function in code
System Default Colors	Colors specified with the system color constants from CONSTANT.TXT, a Visual Basic file that you can load into a project's global module. Window's substitutes the user's choices, as specified through the user's Control Panel Settings.

By default, ForeColor is set to 0 (black)

Data Type

Long

See Also

Drawing

DrawColor Property

Description

If current item is 0, sets or returns the "current" drawing color (the drawing color used for next created items).
If current item is not 0, sets or returns its drawing color.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**DrawColor**[= *color &*]

Settings

The DrawColor property settings are:

Setting	Description
Normal RGB Colors	Color set with RGB or QBColor function in code
System Default Colors	Colors specified with the system color constants from CONSTANT.TXT, a Visual Basic file that you can load into a project's global module. Window's substitutes the user's choices, as specified through the user's Control Panel Settings.

By default, DrawColor is set to 0 (black)

Data Type

Long

See Also

Drawing

DrawStyle Property

Description

If current item is 0, sets or returns the "current" drawing style (the drawing style used for next created items).
If current item is not 0, sets or returns the item drawing style.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**DrawStyle**[= *size*]

Setting

The DrawStyle property settings are:

Setting	Description
0	(Default) Solid
1	Dash
2	Dot
3	Dash-Dot
4	Dash-Dot-Dot
5	Transparent
6	Inside Solid

Data Type

Integer (enumerated)

Remarks

If DrawWidth is set to a value greater than 1, then DrawStyles 1 through 4 produce a solid line (the DrawStyle property value is not changed). If DrawWidth is set to 1, DrawStyle produces the effect described above for each setting.

See Also

Drawing

DrawWidth Property

Description

If current item is 0, sets or returns the "current" drawing pen width (the drawing pen width used for next created items).
If current item is not 0, sets or returns the item drawing pen width.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**DrawWidth**[= *size*]

Setting

You can set DrawWidth to a value of 1 to 8 (pixels).

Data Type

Integer

See Also

Drawing

Shape Property

Description

If current item is 0, sets or returns the "current" node shape (the shape used for next created nodes).

If current item is a node, sets or returns its shape (ellipse, rectangle, round rectangle, diamond).

If current item is a link, writing has no effect and reading returns 0.

If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**Shape**[= *shape*]

Settings

The Shape property settings are:

Setting	Description
0	Ellipse
1	Rectangle
2	Round rectangle
3	Diamond

By default, Shape is set to 0 (ellipse)

Data Type

Integer (enumerated)

See Also

Drawing

LinkHead Property

If current item is 0, sets or returns the "current" link arrowhead shape
(the arrowhead used for next created links).
If current item is a node, writing has no effect and reading returns 0.
If current item is a link, sets or returns its arrowhead
If LoopScope property is True, writing applies to every links involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**LinkHead**[= *shape*]

Settings

The LinkHead property settings are:

Setting	**Description**
0	Filled arrow 15°
1	Filled circle
2	Empty arrow 15°
3	Empty circle
4	Filled arrow 30°
5	Empty arrow 30°
6	Filled arrow 45°
7	Empty arrow 45°

By default, LinkHead is set to 0

Data Type

Integer (enumerated)

See Also

Drawing

Alignment Property

Description

If current item is 0, sets or returns the "current" text alignment style
(the text alignment style used for next created nodes).
If current item is a node, sets or returns its text alignment style.
If current item is a link, writing has no effect and reading returns 0.
If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**Alignment**[= alignment &]

Settings

The Alignment property settings are:

Setting	Description
0	Left - TOP
1	Left - MIDDLE
2	Left - BOTTOM
3	Right - TOP
4	Right - MIDDLE
5	Right - BOTTOM
6	Center - TOP
7	Center - MIDDLE
8	Center - BOTTOM

Data Type

Integer (enumerated)

See Also

Drawing

AutoSize Property

Description

Allows to adjust node size to picture size or adjust picture size to node size.
If current item is 0, sets or returns the "current" node autosize style
(the autosize style used for next created nodes).
If current item is a node, sets or returns its autosize style.
If current item is a link, writing has no effect and reading returns 0.
If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**Autosize**[= autosize &]

Settings

The AutoSize property settings are:

Setting	Description
0	None
1	Adjust picture size to node size
2	Adjust node size to picture size

Data Type

Integer (enumerated)

See Also

Drawing

AutoScroll Property

Description

Specify if Automatic scrolling is allowed. For instance, if an item is dragged to the edge of the currently visible drawing area, the area automatically scrolls.

Usage

[*form*.]*NET*.**AutoScroll**[= {True | False}]

Settings

The AutoScroll Property settings are:

Setting	Description
False	Automatic scrolling is not allowed.
True	(Default) Automatic scrolling is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

Transparent Property

Description

If current item is 0, specify if next created nodes will be transparent or not.
If current item is a node, specify if it is transparent or not.
If current item is a link, writing has no effect and reading returns 0.
If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**Transparent**[= {True | False}]

Settings

The Transparent property settings are:

Setting	Description
False	(default) Opaque
True	Transparent

Data Type

Integer (Boolean)

See also

Drawing

X1, Y1, X2, Y2 Property

Description

If current item is 0, sets or returns the coordinates of upper left point (X1, Y1) or lower right point (X2, Y2) of the bounding rectangle of next created node.

If current item is a node, sets or returns the coordinates of upper left point (X1, Y1) or lower right point (X2, Y2) of its bounding rectangle.

If current item is a link, writing those properties has no effect and reading returns the coordinates of upper left point (X1, Y1) or lower right point (X2, Y2) of its bounding rectangle.

If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.

Not available at design time.

Usage

[*form*.]*NET*.**X1**[= *numeric expression*]

[*form*.]*NET*.**Y1**[= *numeric expression*]

[*form*.]*NET*.**X2**[= *numeric expression*]

[*form*.]*NET*.**Y2**[= *numeric expression*]

Data Type

Long

See Also

Drawing

PointCount Property

Description

If current item is 0 or is a node, writing this property has no effect
and reading it returns 0.
If current item is a link, sets or returns the number of its points.
Not available at design time.

Usage

[*form*.]*NET*.**PointCount**[= *numeric expression*]

Data Type

Integer

Remarks

A link point is a point that joins two segments of a link. If a link has **n** points,
it is composed of **n+1** segments.
The maximum value for the number of link points is **254**.

See Also

Drawing

PointX Property

Description

If current item is 0 or is a node, writing this property has no effect and reading it returns 0.

If current item is a link, sets or returns a long integer value that identifies an x position of a specified link point.

Not available at design time.

Usage

[*form*.]*NET*.**PointX**(index)[= *numeric expression*]

Data Type

Long

Remarks

If current item is a link reading this property has special meanings if index has a negative value between -1 and -4:

- **-1**: returns x position of intersection point between origin node border and link.
- **-2**: returns x position of intersection point between destination node border and link
- **-3:** if link is oriented, returns x position of one arrowhead point.
  If link is not oriented, it has the same effect as the case -2.
- **-4**: if link is oriented, returns x position of the other arrowhead point.

  If link is not oriented, it has the same effect as the case -2.

See Also

Drawing

Example *Print an arrow*

```
Dim i, nbpoint As Integer
Dim l, ptx1, pty1, ptx2, pty2, ptx3, pty3 As Long
Dim ptx(), pty() As Long

'Number of extra points
nbpoint = Net1.PointCount

'Allocate an array of nbpoint + 2
ReDim ptx(0 To nbpoint + 1)
ReDim pty(0 To nbpoint + 1)

'First point (intersection between origin node border and link)
ptx(0) = Net1.PointX(-1)
pty(0) = Net1.PointY(-1)

' Normal extra points
For l = 1 To nbpoint
  ptx(l) = Net1.PointX(l - 1)
  pty(l) = Net1.PointY(l - 1)
Next l

'Last point (intersection between destination node border and link)
ptx(nbpoint + 1) = Net1.PointX(-2)
```

```
pty(nbpoint + 1) = Net1.PointY(-2)

' Draw all link segments
For l = 0 To nbpoint
  printer.Line (ptx(l), pty(l))-(ptx(l+1), pty(l+1)),   Net1.DrawColor
Next l

'Get point arrow head
ptx1 = Net1.PointX(-3)
pty1 = Net1.PointY(-3)
ptx2 = Net1.PointX(-4)
pty2 = Net1.PointY(-4)
ptx3 = ptx(nbpoint + 1)
pty3 = pty(nbpoint + 1)

'Draw arrow head
printer.Line (ptx1, pty1)-(ptx2, pty2), Net1.DrawColor
printer.Line (ptx1, pty1)-(ptx3, pty3), Net1.DrawColor
printer.Line (ptx3, pty3)-(ptx2, pty2), Net1.DrawColor
```

PointY Property

Description

If current item is 0 or is a node, writing this property has no effect and reading it returns 0.

If current item is a link, sets or returns a long integer value that identifies an y position of a specified link point.

Not available at design time.

Usage

[*form*.]*NET*.**PointY**(index)[= *numeric expression*]

Data Type

Long

Remarks

If current item is a link, reading this property has special meanings if index has a negative value between -1 and -4:

- **-1**: returns y position of intersection point between origin node border and link.
- **-2**: returns y position of intersection point between destination node border and link
- **-3:** if link is oriented, returns y position of one arrowhead point.
  If link is not oriented, it has the same effect as the case -2.
- **-4**: if link is oriented, returns y position of the other arrowhead point.

  If link is not oriented, it has the same effect as the case -2.

See Also

Drawing

Example *Print an arrow*

```
Dim i, nbpoint As Integer
Dim l, ptx1, pty1, ptx2, pty2, ptx3, pty3 As Long
Dim ptx(), pty() As Long

'Number of extra points
nbpoint = Net1.PointCount

'Allocate an array of nbpoint + 2
ReDim ptx(0 To nbpoint + 1)
ReDim pty(0 To nbpoint + 1)

'First point (intersection between origin node border and link)
ptx(0) = Net1.PointX(-1)
pty(0) = Net1.PointY(-1)

' Normal extra points
For l = 1 To nbpoint
  ptx(l) = Net1.PointX(l - 1)
  pty(l) = Net1.PointY(l - 1)
Next l

'Last point (intersection between destination node border and link)
ptx(nbpoint + 1) = Net1.PointX(-2)
```

```
pty(nbpoint + 1) = Net1.PointY(-2)

' Draw all link segments
For l = 0 To nbpoint
  printer.Line (ptx(l), pty(l))-(ptx(l+1), pty(l+1)), Net1.DrawColor
Next l

'Get point arrow head
ptx1 = Net1.PointX(-3)
pty1 = Net1.PointY(-3)
ptx2 = Net1.PointX(-4)
pty2 = Net1.PointY(-4)
ptx3 = ptx(nbpoint + 1)
pty3 = pty(nbpoint + 1)

'Draw arrow head
printer.Line (ptx1, pty1)-(ptx2, pty2), Net1.DrawColor
printer.Line (ptx1, pty1)-(ptx3, pty3), Net1.DrawColor
printer.Line (ptx3, pty3)-(ptx2, pty2), Net1.DrawColor
```

Oriented Property

Description

If current item is 0, specify if next created links will be oriented or not.
If current item is a link, specify if it is oriented or not.
If current item is a node, writing has no effect and reading returns 0.
When a link is oriented, it is displayed with an arrowhead at its destination node.
If LoopScope property is True, writing applies to every links involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**Oriented**[= {True | False}]

Settings

The Oriented property settings are:

Setting	Description
False	no arrowhead
True	(default) one arrowhead

Data Type

Integer (Boolean)

See also

Navigation

Org Property

Description

Sets the origin node of next created links (The value of the current item has no effect when writing this property).
If current item is 0, or if it is not a link, returns the origin node of next created links.
If current item is a link, returns its origin node.
Not available at design time.

Usage

[*form*.]*NET*.**Org**[= *idNode*]

Data Type

Long

Remarks

It is not possible to change directly the origin node of a link. If you want to do that, you have to memorize the link properties, destroy it, create a new one with the new origin node and sets previous saved properties.

See Also

Navigation

Dst Property

Description

Sets the destination node of next created links (The value of the current item has no effect when writing this property).
If current item is 0, or if it is not a link, returns the destination node of next created links.
If current item is a link, returns its destination node.
Not available at design time.

Usage

[*form*.]*NET*.**Dst**[= *idNode*]

Data Type

Long

Remarks

It is not possible to change directly the destination node of a link. If you want to do that, you have to memorize the link properties, destroy it, create a new one with the new destination node and sets previous saved properties.

See Also

Navigation

Item Property

Description

Sets or returns the current item (node or link). The current item is the selected one. Making an item be the current one allows to work with it (setting or getting its properties: position ,size, text, colors, etc).

Setting this property causes previous selection to disappear.

Not available at design time.

Usage

[*form*.]*NET*.**Item**[= *item*]

Data Type

Long

See Also

Items

IsLink Property

Description

Indicates if the current item is a link.
Not available at design time; read only at run time.

Usage

[*form*.]*NET*.**IsLink**

Settings

The IsLink property settings are:

Setting	Description
False	current item is 0 or it is a node
True	current item is not 0 and it is a link

Data Type

Integer (Boolean)

See Also

Items

Sleeping Property

Description

If current item is 0, it has no effect.
If current item is not 0, specify if it is in "sleeping mode" or not.
Not available at design time
When an item is in "sleeping mode", it is inactive and the user cannot interactively make it current or selected. He can do this only programmaticaly by saving its identifier in a global variable. Such an item can be used to display a bitmap or a text but the user cannot move, stretch or resize it with the mouse.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.

Usage

[*form*.]*NET*.**Sleeping** [= {True | False}]

Settings

The Sleeping property settings are:

Setting	Description
False	(default) The item is active.
True	The item is sleeping.

Data Type

Integer (Boolean)

See also

Items

LoopAction Property

Description

Specifies the type of item navigation to perform.
Not available at design time; write only at run time.

Usage

[*form*.]*NET*.**LoopAction** = *setting*

Settings

The LoopAction property settings are:

Setting	Description
0	all nodes
1	all links
2	all selected nodes
3	all links of a node
4	all links leaving current node (out links)
5	all links coming to current node (in links)
6	all nodes connected to a node (in and out nodes)
7	all destination nodes of current node
8	all origin nodes of current node
9	all owned nodes of current node
10	all items (nodes and links).

Data Type

Integer (enumerated)

Remarks

1. This property is to be used in conjonction with LoopCount and LoopItem properties:
   - LoopAction specifies the type of loop to do: for instance a loop among all current node links (LoopAction = 3).
   - After a call to LoopAction, LoopCount indicates the number of items involved in this loop.
   - Finally, LoopItem allows to read each item and to perform any work with it.
2. Two calls to LoopAction property cannnot be cascaded.

See Also

Navigation

LoopCount Property

Description

Specifies the count of items involved in a navigation action performed by a call to LoopAction property.
Not available at design time; read only at run time.

Usage

[*form*.]*NET*.**LoopCount**

Data Type

Integer

Remarks

This property has to be called just after a call to LoopAction property.

See Also

Navigation

LoopItem Property

Description

Returns an item selected in a navigation action performed by a call to LoopAction property.

Not available at design time; read only at run time.

Usage

[*form*.]*NET*.**LoopItem**(index)

Data Type

Long

See Also

Navigation

LoopScope Property

Description

When set to True, this property indicates that next item property settings will apply to all items involved in a call to LoopAction property.

Not available at design time

Usage

[*form*.]*NET*.**LoopScope**[= {True | False}]

Settings

The LoopScope Property settings are:

Setting	Description
False	(Default) No loop scope .
True	Loop scope is performed.

Data Type

Integer (Boolean)

Remark

Properties that may have a loop scope are the following:

Alignment	Data	DrawColor	DrawStyle
DrawWidth	FillColor	ForeColor	Hiding
LinkHead	Oriented	Owner	Picture
Shape	Sleeping	Transparent	Type
X1	Y1	X2	Y2

See Also

Navigation

Example:
Makes all selected nodes transparent.

```
' Do a loop with selected nodes
Net1.LoopAction = 2
' Indicates that next item property settings apply
' to all items in the loop.
Net1.LoopScope = True
' Cause all selected nodes to be transparent.
Net1.Transparent = True
' Reset loop scope to false
Net1.LoopScope = False
```

Type Property

Description

If current item is 0, writing this property has no effect and reading it returns 0.
If current item is not 0, sets or returns its associated integer data.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.
Not available at design time.

Usage

[*form*.]*NET*.**Type**[= *setting*]

Data Type

Integer

Remarks

Typically, this property allows the user to define node or link types. Like Data property, the value of Type property is not used by the EasyNet control but only stored. The meaning of this property depends on the application that uses it.

See Also

Data Association

Data Property

Description

If current item is 0, writing this property has no effect and reading it returns 0.
If current item is not 0, sets or returns its associated long data.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.
Not available at design time.

Usage

[*form*.]*NET*.**Data**[= *setting*]

Data Type

Long

Remarks

Like Type property, the value of Data property is not used by the EasyNet control but only stored. The meaning of this property depends on the application that uses it.

See Also

Data Association

Text Property

Description

If current item is 0, writing this property has no effect and reading it returns an empty string.

If current item is not 0 (node or link), sets or returns the text associated with this item. The EasyNet control maintains the memory for the strings associated to items.

Not available at design time.

The text associated to a node is displayed inside the node. It is a multiline display. The text is wrapped automatically inside the node. Linefeed and carriage return characters are supported.

The text associated to a link is displayed at the middle of its segment number n/2 + 1 (n is the number of segments). This text is displayed in a single line.

Usage

[*form*.]*NET*.**Text**[= *string expression*]

Data Type

String

Remarks

The Text setting is approximately **65,500** characters.

See Also

Drawing

ItemTag Property

Description

If current item is 0, writing this property has no effect and reading it returns an empty string.

If current item is not 0 (node or link), sets or returns a tag associated with this item. The EasyNet control maintains the memory for the tags associated to items.

Not available at design time.

Usage

[*form*.]*NET*.**ItemTag**[= *string expression*]

Data Type

String

Remarks

The Itemtag setting is approximately **65,500** characters.

See Also

Data Association

Picture Property

Description

If current item is 0, sets or returns the picture to be displayed in next created nodes.
If current item is a node, sets or returns the picture to be displayed in this node. This picture can be a bitmap or an icon.
If current item is a link, writing this property has no effect and reading it returns 0.
If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.
Not available at design time.

Usage

[*form*.]*NET*.**Picture**[= *picture*]

Settings

The Picture Property settings are:

Setting	Description
(none)	(Default)
(bitmap, icon)	Specifies a picture. You can also set this property using the LoadPicture function on a bitmap or an icon.

Data Type

Integer

See Also

Drawing

SelectMode Property

Description

Allow to enter in selection mode instead of drawing mode. This property has no effect if MultiSel property is not set.
Not available at design time.
The **selection mode** allows to select several items. You bring the mouse cursor into the EasyNet control, press the left button, move the mouse and release the left button. All nodes inside the selection rectangle are selected. Then you can unselect some items by clicking them with the mouse and simultaneously pressing the shift or control key. You can select them again by using the same method.

Usage

[*form*.]*NET*.**SelectMode**[= {True | False}]

Settings

The SelectMode Property settings are:

Setting	Description
False	(Default) Drawing mode.
True	Select mode is set.

Data Type

Integer (Boolean)

CanDrawNode Property

Description

Specify if you can create nodes interactively.

Usage

[*form*.]*NET*.**CanDrawNode**[= {True | False}]

Settings

The CanDrawNode Property settings are:

Setting	Description
False	Drawing nodes is not allowed.
True	(Default) Drawing nodes is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

CanDrawLink Property

Description

Specify if you can create links interactively.

Usage

[*form*.]*NET*.**CanDrawLink**[= {True | False}]

Settings

The CanDrawLink Property settings are:

Setting	Description
False	Drawing links is not allowed.
True	(Default) Drawing links is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

CanMoveNode Property

Description

Specify if you can move (drag) nodes interactively.

Usage

[*form*.]*NET*.**CanMoveNode**[= {True | False}]

Settings

The CanMoveNode Property settings are:

Setting	Description
False	Moving nodes is not allowed.
True	(Default) Moving nodes is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

CanSizeNode Property

Description

Specify if you can resize nodes interactively.

Usage

[*form*.]*NET*.**CanSizeNode**[= {True | False}]

Settings

The CanSizeNode Property settings are:

Setting	Description
False	Sizing nodes is not allowed.
True	(Default) Sizing nodes is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

CanStretchLink Property

Description

Specify if you can "stretch" links (i.e add or remove segments)interactively

Usage

[*form*.]*NET*.**CanStretchLink**[= {True | False}]

Settings

The CanStretchLink Property settings are:

Setting	Description
False	Stretching links is not allowed.
True	(Default) Stretching links is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

CanMultiLink Property

Description

Specify if you can have several links between two nodes.

Usage

[*form*.]*NET*.**CanMultiLink**[= {True | False}]

Settings

The CanMultiLink Property settings are:

Setting	Description
False	(Default) Multi links is not allowed.
True	Multi links is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

MultiSel Property

Description

Specify if multiselection mode is possible or not.

Usage

[*form*.]*NET*.**MultiSel**[= {True | False}]

Settings

The MultiSel Property settings are:

Setting	Description
False	Multi selection is not allowed.
True	(Default) Multi selection is allowed.

Data Type

Integer (Boolean)

See Also

Capabilities

ReadOnly Property

Description

Set "read only" mode. In such a mode user interaction is not allowed.

Usage

[*form*.]*NET*.**ReadOnly**[= {True | False}]

Settings

The ReadOnly Property settings are:

Setting	Description
False	(Default) "Read only" mode is set.
True	"Read only" mode is not set.

Data Type

Integer (Boolean)

See Also

Capabilities

ScrollBars Property

Description

Allows to add scrollbars for the EasyNet control. Read-only at run time.

Usage

[*form*.]*NET*.**ScrollBars**[= *setting*]

Settings

The ScrollBars Property settings are:

Setting	Description
0	(Default) No scrollbar.
1	Horizontal scrollbar.
2	Vertical scrollbar.
3	Both Horizontal and Vertical scrollbars.

Data Type

Integer (Enumerated)

See Also

Capabilities

xGrid, yGrid Property

Description

Sets or returns the grid values in twips.

Usage

[*form*.]*NET*.**xGrid**[= *numeric expression*]

[*form*.]*NET*.**yGrid**[= *numeric expression*]

Data Type

Long

See Also

Capabilities

ShowGrid Property

Description

Specify if the grid is displayed or not.

Usage

[*form*.]*NET*.**ShowGrid**[= {True | False}]

Settings

The ShowGrid Property settings are:

Setting	Description
False	(Default) The grid is not displayed.
True	The grid is displayed.

Data Type

Integer (Boolean)

See Also

Capabilities

xScroll, yScroll Property

Description

Sets or returns the scroll values in twips.

Not available at design time.

Usage

[*form*.]*NET*.**xScroll**[= *numeric expression*]

[*form*.]*NET*.**yScroll**[= *numeric expression*]

Data Type

Long

PointedArea Property

Description

Returns the type of the area pointed by the mouse (sizing square, stretching square, linking square, node, over no special area).

Not available at design time; read only at run time

Usage

[*form*.]*NET*.**PointedArea**

Settings

The PointedArea property settings are:

Setting	Description
0	Size NW-SE square area
1	Size N-S square area
2	Size NE-SW square area
3	Size W-E square area
4	Stretching square area
5	Linking square area
6	Node area
7	No special area.
8	Link area

Data Type

Integer

Remarks

This property allows to change dynamically the mouse pointer BEFORE the user clicks anywhere, to indicate what actions are possible.

For example, when the pointer is over one of the corner points of a node, it should change to the standard NE/SW or NW/SE diagonal arrow. When it is over a side node, it would be the N/S or E/W arrow.

PointedItem Property

Description

Returns the item identifier pointed by the mouse.
Not available at design time; read only at run time

Usage

[*form*.]*NET*.**PointedItem**

Data Type

Long

BackPicture Property

Description

This property is the same as the standard Visual Basic Picture property except that it only supports bitmap (.BMP) files.

DoAddLink Property

Description

Specify if AddLink event can be fired. Setting this property to False increases speed performance.

Usage

[*form*.]*NET*.**DoAddLink**[= {True | False}]

Settings

The DoAddLink Property settings are:

Setting	Description
False	AddLink event cannot be fired
True	(Default) AddLink event can be fired

Data Type

Integer (Boolean)

See Also

Capabilities
Performance tuning

DoAddNode Property

Description

Specify if AddNode event can be fired. Setting this property to False increases speed performance.

Usage

[*form*.]*NET*.**DoAddNode**[= {True | False}]

Settings

The DoAddNode Property settings are:

Setting	Description
False	AddNode event cannot be fired
True	(Default) AddNode event can be fired

Data Type

Integer (Boolean)

See Also

Capabilities
Performance tuning

DoChange Property

Description

Specify if Change event can be fired. Setting this property to False increases speed performance.

Usage

[*form*.]*NET*.**DoChange**[= {True | False}]

Settings

The DoChange Property settings are:

Setting	Description
False	Change event cannot be fired
True	(Default) Change event can be fired

Data Type

Integer (Boolean)

See Also

Capabilities
Performance tuning

DoSelChange Property

Description

Specify if SelChange event can be fired. Setting this property to False increases speed performance.

Usage

[*form*.]*NET*.**DoSelChange**[= {True | False}]

Settings

The DoSelChange Property settings are:

Setting	Description
False	SelChange event cannot be fired
True	(Default) SelChange event can be fired

Data Type

Integer (Boolean)

See Also

Capabilities
Performance tuning

Repaint Property

Description

Specify if repainting the EasyNet control is allowed or not.Setting this property to False increases speed performance. Setting this property to True causes a refresh.

Not available at design time

Usage

[*form*.]*NET*.**Repaint**[= {True | False}]

Settings

The Repaint Property settings are:

Setting	Description
False	Repainting not allowed.
True	(Default) Repainting allowed

Data Type

Integer (Boolean)

See Also

Performance tuning

CheckItem Property

Description

Specify if item checking is performed or not. Setting this property to False increases
speed performance.

Important: Setting this property to False requires to be very cautious when using Item, Org and Dst properties. Setting wrong values to those properties when CheckItem is False may result in a General Protection Fault .

Not available at design time

Usage

[*form*.]*NET*.**CheckItem**[= {True | False}]

Settings

The CheckItem Property settings are:

Setting	Description
False	Item checking is not performed.
True	(Default) Item checking is performed

Data Type

Integer (Boolean)

See Also

Performance tuning

Version Property

Description

Returns the version of the EasyNet control currently loaded in memory.

Read only.

Usage

[*form*.]*NET*.**Version**

Data Type

Integer

Remarks

The version number is a three digit integer where the first digit is the major version number and the last two represent the minor version number. For example, if current version is 1.60, then this property returns 160.

Hiding Property

Description

If current item is 0, specify if next created items will be visible or not
If current item is not 0, specify if it is visible or not.
If LoopScope property is True, writing applies to every items involved in a call to LoopAction property.
Not available at design time

Usage

[*form*.]*NET.***Hiding** [= {True | False}]

Settings

The Hiding property settings are:

Setting	Description
False	(default) The item is visible.
True	The item is not visible.

Data Type

Integer (Boolean)

See also

Drawing

ImageFile Property

Description

Sets a file name to which the metafile is written when EditAction is set to 8.
If a path is not specified, the current directory is used.

Usage

[*form*.]*NET.***ImageFile** [= filename$]

Data Type

String

Remarks

The appropriate extension (.WMF) is appended automatically.

See also

EditAction

DisplayHandles Property

Description

Specify if handles are displayed. The handles are the little black squares on the selected item.

Usage

[*form*.]*NET*.**DisplayHandles**[= {True | False}]

Settings

The DisplayHandles Property settings are:

Setting	Description
False	Handles are not displayed.
True	(Default) Handles are displayed.

Data Type

Integer (Boolean)

Zoom Property

Description

Specify a zoom factor which can be a value between 0 and 1000.
Setting it to 0 display the diagram so that it fits in the control area.
Setting it to 100% display the diagram at its normal size.
Setting it to a value higher than 100% expands the diagram
Setting it to a value less than 100% shrinks the diagram.

Usage

[*form*.]*NET*.**Zoom**[= *setting*]

Data Type

Integer

ItemZOrder Property

Description

Places current item at the front or back of the z-order.
Not available at design time; write only at run time.

Usage

[*form*.]*NET*.**ItemZOrder** = *setting*

Settings

The ItemZOrder property settings are:

Setting	Description
0	Send item Front
1	Send item Back

Data Type

Integer

Remarks

If you perform a loop among all items (Net1.LoopAction = 10), items sent back will be at the beginning of the list whereas items sent front will be at the end of the list.

See also

Items

Owner Property

Description

If current item is a node, sets or returns its owner node.
If current item is 0 or is a link, writing has no effect and reading returns 0.
If LoopScope property is True, writing applies to every nodes involved in a call to LoopAction property.
Not available at design time.

Usage

[*form*.]*NET*.**Owner**[= *idNode*]

Data Type

Long

Remarks

- A node follows its owner. When an owner node is moved, all its owned nodes are also moved. This happens only when the user moves the node interactively with the mouse (dragging). If the node is moved programmaticaly (i.e changing its X1 or Y1 properties), owned nodes do not move.
- A node cannot be an owner node if it is owned by another node.
- You can get each owned node of current node with LoopAction property.
- A node cannot owns itself.
- This property may be used to implement stubs or pins, allowing a node to have several owned nodes inside itself and those owned nodes can be used as stubs receiving links. For instance, in the following diagram, the flat rectangular node is the owner of 4 little nodes used as stubs. You may make those little nodes sleeping (see Sleeping property) so that the user cannot select it, size it or move it.

Change Event

Description

Occurs when a change is made. (For instance, an item is added, moved, deleted or one of its properties is changed).

Syntax

Sub *NET*_**Change** ()

Remarks

- This event is not fired if DoChange property is False.
- Important: Actions that change something in the diagram (i.e. creating, deleting or altering one item) should not be used within this event as you will encounter unexpected results.

SelChange Event

Description

Occurs when selection is changed.

Syntax

Sub ***NET***_SelChange **()**

Remarks

- This event is not fired if DoSelChange property is False.
- Important: Actions that change selection (i.e. using Item Property) should not be used within this event as you will encounter unexpected results

AddNode Event

Description

Occurs when a node is added.

Syntax

Sub *NET*_**AddNode** ()

Remarks

- This event is not fired if DoAddNode property is False.
- Important: Actions that create nodes (i.e. using EditAction Property) should not be used within this event as you will encounter unexpected results.
- Typically, this event allows the user to change a property of the node just after its creation and just before it is displayed. For instance, if you need fixed size nodes, you have just to give values to X1, X2, Y1, Y2 properties:

```
Sub Net1_AddNode ()
    Net1.X2 = Net1.X1 + 500
    Net1.Y2 = Net1.Y1 + 500
End Sub
```

- In fact when a node is created, three events are generated in the following order:

  SelChange

  AddNode

  Change

AddLink Event

Description

Occurs when a link is added.

Syntax

Sub *NET*_**AddLink** ()

Remarks

- This event is not fired if DoAddLink property is False.
- Important: Actions that create links (i.e. using EditAction Property) should not be used within this event as you will encounter unexpected results.
- Typically, this event allows the user to change a property of the link just after its creation and just before it is displayed.
- In fact when a link is created, three events are generated in the following order:

  SelChange

  AddLink

  Change

ErrSpace Event

Description

Occurs when no more memory is available.

Syntax

Sub *NET*_**ErrSpace** ()

Registration

The demonstration version of the EasyNet control is FULLY FUNCTIONAL but may only be used in the development environment. If you generate an EXE file with this version of the EasyNet control but without an EasyNet license file, then any attempt to use this EXE file will display a dialog box explaining that it has been generated without license file and the control will be limited to 20 items.

If you like EasyNet control then you can receive EasyNet license file by registering as follows:

1) EITHER in the SWREG forum on Compuserve:

License type	SWREG id	Price
Single User	2547	$ 119
3-5 Users	5487	$ 350
Unlimited User License	5488	$ 650

Then you will receive the EasyNet license file by Compuserve E-Mail and the registration fee will be billed to your Compuserve Account. This is a quick and easy way to register EasyNet.

2) EITHER by ordering with MC, Visa, Amex, or Discover from Public (software) Library by calling 800-2424-PsL or 713-524-6394 or by FAX to 713-524-6398 or by CIS Email to 71355,470. You can also mail credit card orders to PsL at P.O.Box 35705, Houston, TX 77235-5705. Ask for product # 11517. The cost is $ 122 (includes $3 s&h charge). Then, you will receive the EasyNet license file on diskette.

Note: THE ABOVE NUMBERS ARE FOR ORDERS ONLY. Please address any questions to Patrick Lassalle through CIS e-mail.

3) EITHER by completing and sending the Order Form, along with a check for the amount listed above (plus $3 s&h if a diskette is used instead of E-Mail)

to:

Patrick Lassalle
247, Avenue du Marechal Juin
92100, Boulogne
FRANCE

Then, you will receive the EasyNet license file either on diskette or via E-Mail if possible.

Note: If you want to pay with french currency, prices are the following (plus FF 15 s&h if a diskette is used instead of E-Mail)

License type	French Price
Single User	FF 595
3-5 Users	FF 1750
Unlimited User License	FF 3250

Registration benefits.

In return for your registration you receive these benefits:
- a **license** file giving a royalty-free right to reproduce and distribute the control file EasyNet.vbx with any application that you develop and distribute.*This license file is not for distribution.*

- full product **support** (via Compuserve) for a period of 12 months.
- the right to use EasyNet in your design environment.

License Agreement

The EasyNet custom control is not public domain or free software.

Licensing:

1. shareware version

You may use the shareware version of the EasyNet custom control for up to **30 days** in your design environment for evaluation purposes only. You may copy and distribute it freely as long as all the files in the package, including the demo programs are distributed with it and no changes or additions of any kind are made to the original package.

2. registered version

As a registered user, you can use the EasyNet custom control in your design environment and you have a royalty-free right to distribute executables that use EasyNet as a runtime component. Only registered users can distribute executables using the EasyNet custom control.

You may copy the software to facilitate your use of it on as many computers as there are licensed users specified in the **EasyNet.lic** file. Making copies for any other purpose violates international copyright laws. In particular, you are prohibited from distributing a registered version of the EasyNet custom control, except as a runtime component of one of your applications.

The **EasyNet.lic** file allows you to compile your applications with the EasyNet custom control. YOU ARE NOT ALLOWED TO DISTRIBUTE EASYNET.LIC FILE.

Disclaimer of Warranty:

THIS SOFTWARE AND THE ACCOMPANYING FILES ARE SOLD "AS IS" WITHOUT WARRANTY OF ANY KIND EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Good data processing procedure dictates that any program be thoroughly tested with non-critical data before relying on it.

The user must assume the entire risk of using the program.

Your use of this product indicates that you have read and agreed to these terms.

EasyNet Order Form (Select "Print Topic" from the File menu to print this order).

Date of order: _____

SHIPPING ADDRESS

Name _____

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PAYMENT ADRESS:

Patrick Lassalle
247 , Avenue du Marechal Juin
92100, Boulogne
FRANCE

Please send me the last version of EasyNet Custom Control:

Single User License	**US $ 119**	(or FF 595)	**x**	_____
3-5 Users License	**US $ 350**	(or FF 1750)	**x**	_____
Unlimited User License	**US $ 650**	(or FF 3250)	**x**	_____
s & h. (if diskette required)	**US $ 3**	(or FF 15)		_____
		TOTAL		_____

The diskette contains the EasyNet license file and the EasyNet package in a zip file. Those files may be sent via e-mail. In such a case, s & h is not to be included.

All payment must be by check in U.S. funds or French funds.

Please make the check payable to Patrick Lassalle.

Prices and terms subject to change without notice.

Installation

Demonstration version:The files **easynet.vbx** and **easynet.hlp** should be copied in your WINDOWS\SYSTEM directory.

Registered version:The files **easynet.vbx, easynet.hlp** and **easynet.lic** should be copied in your WINDOWS\SYSTEM directory.

Distribution note: When you create and distribute applications that use the EasyNet control you should install the file **easynet.vbx** in the customer's Microsoft Windows \SYSTEM subdirectory. The Visual Basic Setup Kit included with the Professional VB product provides tools to help you write setup programs that install you applications correctly.

*You are not allowed to distribute **easynet.lic** file with any application that you distribute.*

Support

EasyNet support can be obtained

- via Compuserve: **100325,725**
- via Internet.: **100325.725@compuserve.com**
- at the address indicated in Registration

Thanks in advance for your feedbacks or questions!

Acknowledgments

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