Chapter 25
Compatibility With Visual BASIC

The language structures in OpenOffice.org BASIC are very similar to those used in Visual BASIC. The methods used for accessing the underlying documents, however, are vastly different and have essentially no compatibility with each other. Entire books have been written dealing with the differences between Visual BASIC 6 (VB6), Visual BASIC.NET (VB.NET), and Visual BASIC for Applications (VBA). This chapter is only an overview of issues concerning compatibility between the OpenOffice.org BASIC and Visual BASIC. I use VBA, VB6 and VB.NET to refer to the specific versions and VB to generically refer to either or both versions.

To convert VB macros that do not access the underlying documents, my first step is to bring them into OOo and fix the syntax errors. The second step is to remove the errors introduced due to differences in behavior. Thorough testing is required to avoid subtle problems. Significant code changes are required to convert the sections that access the underlying document structures.

VBA is the variant used by Microsoft Office. VB.NET was released after VBA so it is possible that a later version of VBA will follow in the direction of VB.NET. Some of the keywords supported by OOo BASIC and deprecated when moving from VB6 and VBA to VB.NET are in Table 1.

Table 1. OOo BASIC Keywords deprecated when moving to VB to VB.NET.

Keyword	Keyword	Keyword	Keyword	Keyword	Keyword	Keyword
Atn	Currency	DefBool	DefDate	DefDbl	DefInt	DefLng
DefObj	DefVar	Empty	Eqv	GoSub	Imp	IsEmpty
IsMissing	IsNull	IsObject	Let	Line	LSet	MsgBox
Now	Null	On?GoSub	On?GoTo	Option Base	Private	Rnd
RSet	Set	Sgn	Sqr	Wend		

Data Types

Table 2. VB.NET uses different names for some numerical functions.

OOo BASIC	VB	VB.NET	Return Value
Byte	Byte	Byte	0 through 255, OOo BASIC uses the CByte function to create one.
Integer	Integer	Short	–32,768 through 32,767
Long	Long	Integer	–2,147,483,648 through 2,147,483,647
		Long	–9,223,372,036,854,775,808 through 9,223,372,036,854,775,807
Currency	Currency		+/–922,337,203,658,477.5808 fixed point number. Same as a VB.NET Long. The number is multiplied internally by 10,000, thereby eliminating the need for the decimal point, and then stored in binary form as an integer. This prevents the rounding errors that can occur when decimal fractions are stored as binary floating-point numbers.
	Decimal	Decimal	+/–79,228,162,514,264,337,593,543,950,335 for numbers with no decimal places. The smallest possible non-zero number is 0.0000000000000000000000000001.
String	String	String	OOo BASIC has a limit of 65,535 Unicode characters, VB may contain approximately 2 billion Unicode characters.

Variables

- VB.NET does not support Variant variables so variables with no declared type default to type Object. Other VB versions are compatible with OOo BASIC.
- VB.NET replaced the Currency data type with the Decimal data type. Other VB versions are compatible with OOo BASIC.
- VB.NET does not support the keywords DefBool, DefDate, DefDbl, DefInt, DefLng, DefObj, and DefVar. Other VB versions are compatible with OOo BASIC.
- VB.NET does not support the keywords Set and Let.
- VB.NET does not support the keywords NULL or Empty.

- Although OOo BASIC supports the syntax for fixed length strings (Dim s As String * 100), they are still variable length strings. All VB versions support fixed length strings.
- OOo BASIC strings are limited are limited to 65,535 Unicode characters. In VB, variable length strings may contain approximately 2 billion Unicode characters. Loss of data is a very real problem in OOo BASIC compared to VB.

Arrays

- VB.NET deprecated Option Base. Other VB are not totally compatible with OOo BASIC.
- VBA and VB6 support Option Base but but, unlike OOo BASIC, they do not change the upper bound of an array, only the lower bound.
- VB only supports ReDim Preserve when changing the index size on the last dimension. OOo BASIC supports changing any dimension of a multi–dimension array.
- VB only supports ReDim to change the dimension of an array whose dimensions are not explicitly declared. OOo BASIC is more flexible.

Subroutine and Function Constructs

- VB allows a Sub or Function to be preceded by optional scoping keywords such as Public; OOo BASIC does not.
- VB supports the optional keyword ByRef. This keyword is not supported by OOo BASIC. Passing parameters by reference is the default behavior so the keyword is redundant.
- VB supports the keyword ParamArray, OOo BASIC does not.
- VB supports default parameters, OOo BASIC does not.
- VB.NET does not support the function IsMissing; a method of declaring default parameters is used instead. Other VB versions are compatible with OOo BASIC.

Operators

- VB.NET does not support the EQV or IMP operators. Other VB versions are compatible with OOo BASIC.
- VB.NET supports extra operators such as Like, AndAlso, and OrElse.
- VB has different precedence rules. For example, AND is higher than OR, which is higer than XOR.

- VB supports an Option Compare statement that controls how strings are compared. This is not compatible with OOo BASIC. Use the StrComp function instead.
- VB.NET follows standard mathematical convention and gives exponentiation a higher precedence than negation. For example, -2^2 = -4 in VB and 4 in OOo BASIC.

Flow Control

- VB supports a For Each ... Next Loop construct not supported by OOo BASIC.
- VB.NET doe not support the keyword GoSub.
- VB.NET does not support the On GoTo and On GoSub statements.

Error Handling

- VB uses an Err object to obtain error information. OOo BASIC uses three functions Err, Error, and Erl.
- Some versions of VB support On Error GoTo -1, which functions the same as On Error GoTo 0.
- Some versions of VB require that all error handlers use a unique name, OOo BASIC does not require this.
- OOo BASIC does not allow an On Error commands outside of a subroutine or function.

Subroutines and Functions

Numerical Subroutines and Functions

Although VB remains largely compatible with OOo BASIC, VB.NET changed the names and methods to access some of the common functions (see Table 3).

Table 3. VB.NET uses different names for some numerical functions.

OOo BASIC	VB	VB.NET	Return Value
ABS	ABS	Math.Abs	The absolute value of a specified number.
ATN	ATN	Math.Atan	The angle whose tangent is the specified number.
COS	COS	Math.Cos	The cosine of the specified angle.
Exp	Exp	Math.Exp	The base of natural logarithms raised to a power.

OOo BASIC	VB	VB.NET	Return Value
Log	Log	Math.Log	The logarithm of a number. In VB.NET this method can be overloaded to return either the natural (base e) logarithm or the logarithm of a specified base.
not supported	Round	Math.Round	Value containing the number nearest the specified value.
Sgn	Sgn	Math.Sign	Integer value indicating the sign of a number.
SIN	SIN	Math.Sin	The sine of an angle.
Sqr	Sqr	Math.Sqrt	The square root of a number.
TAN	TAN	Math.Tan	The tangent of an angle.

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- *VB contains more functions, such as CCur to convert to the Currency type.*
- *There are differences in the whole number types. For example, although CInt returns an Integer in both languages, an integer in VB.NET is equivalent to an OOo BASIC Long.*
- *The rounding rules are different in VB, numbers are rounded to the nearest even number when the decimal point is exactly .5; this is called IEEE rounding.*

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In VB Date$ and Time$ return a string and value but Date and Time return numerical based types suitable for mathematical operations. OOo Basic supports all four functions, but they all return a string.

The Date and Time functions are documented to set the system date and time. This is not currently supported.

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The CHR function is frequently written as CHR$. In VB, CHR$ returns a string and can not handle null input values and CHR returns a variant able to accept

and propagate null values. In OOo Basic, they are the same; they both return strings and they both generate a runtime error with a null input value.

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In VB, LSet allows you to overlay data from one user–defined type with data from another. This takes all the bytes from one data structure and overlays them on top of another, ignoring the underlying structure. In OOo BASIC, LSet only manipulates strings.

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VB supports all of OOo BASIC format specifiers, and more.

Table 3. OOo BASIC Keywords deprecated when moving to VB to VB.NET.

Keyword	**Keyword**	**Keyword**	**Keyword**	**Keyword**	**Keyword**	**Keyword**
IsEmpty	IsNull	IsObject		Line	LSet	MsgBox
Now	RSet			Wend		

Conclusion

This chapter was never finished and it was slated for inclusion in my published book. I have not updated this to include things such as “compatibility mode”, which works as advertised.