# Model Advisor Report – Project\_v2.slx

Simulink version: 10.5 Model version: 1.12 System: Project v2 Current run: 26-Mar-2022 09:46:36 Treat as Referenced Model: off **Run Summary** Incomplete Justified Passed Failed Warning Not Run Total **O 6**5 193 0 0 10 **118** Model Advisor Identify lookup table blocks that generate expensive out-of-range checking code Not Run Electric Check configuration parameters for generation of inefficient saturation code Not Run ☐ Check for blocks not recommended for C/C++ production code deployment Not Run ■ Check output types of logic blocks Not Run ☐ Check the hardware implementation Not Run

☐ Identify questionable software environment specifications  Not Run
Identify questionable code instrumentation (data I/O) Not Run
Identify blocks generating inefficient algorithms  Not Run
□ Check configuration parameters for MISRA C:2012  Not Run
Check for blocks not recommended for MISRA C:2012  Not Run
☐ Check for unsupported block names  Not Run
☐ Check usage of Assignment blocks  Not Run
Check for switch case expressions without a default case  Not Run
☐ Check for missing error ports in AUTOSAR receiver interfaces  Not Run
<ul><li>☐ Check configuration parameters for secure coding standards</li><li>Not Run</li></ul>
Check for blocks not recommended for secure coding standards  Not Run

Identify questionable subsystem settings  Not Run
Check for blocks not supported for row-major code generation  Not Run
Identify TLC S-Functions with unset array layout  Not Run
Identify blocks that generate expensive fixed-point and saturation code  Not Run
Check for missing const qualifiers in model functions  Not Run
Check bus object names that are used as bus element names  Not Run
Identify questionable fixed-point operations  Not Run
Identify blocks that generate expensive rounding code  Not Run
Check for bitwise operations on signed integers  Not Run
Check for recursive function calls  Not Run

Check for equality and inequality operations on floating-point values Not Run
Check integer word lengths  Not Run
Simulink
☐ Check optimization settings Not Run
Identify unconnected lines, input ports, and output ports  Not Run
☐ Check root model Inport block specifications  Not Run
Check diagnostic settings ignored during accelerated model reference simulation  Not Run
Check for parameter tunability information ignored for referenced models  Not Run
☐ Check for implicit signal resolution  Not Run
☐ Check for optimal bus virtuality  Not Run
☐ Check for calls to slDataTypeAndScale()  Not Run

☐ Check for Discrete-Time Integrator blocks with initial condition uncertainty  Not Run
Identify disabled library links Not Run
Identify parameterized library links Not Run
Identify unresolved library links Not Run
Identify configurable subsystem blocks in the model for converting to variant subsystem blocks.  Not Run
☐ Check usage of function-call connections  Not Run
Ell Check and update mask image display commands with unnecessary imread() function calls  Not Run
El Check and update mask to affirm icon drawing commands dependency on mask workspace  Not Run
Identify Environment Controller blocks to be replaced with Variant Source blocks  Not Run
Runtime diagnostics for S-functions Not Run
☐ Check if Read/Write diagnostics are enabled for Data Store blocks  Not Run

☐ Check Data Store Memory blocks for multitasking, strong typing, and shadowing issues  Not Run
☐ Check Model History properties  Not Run
☐ Check S-functions in the model  Not Run
Open the Upgrade Advisor     Not Run
Check structure parameter usage with bus signals  Not Run
Check for large number of function arguments from virtual bus across model reference boundar  Not Run
Check Delay, Unit Delay and Zero-Order Hold blocks for rate transition  Not Run
Check bus signals treated as vectors  Not Run
Check for potentially delayed function-call block return values  Not Run
Identify block output signals with continuous sample time and non-floating point data type  Not Run

Check usage of Merge blocks Not Run
Check usage of Outport blocks Not Run
Check usage of Discrete-Time Integrator blocks  Not Run
Check model settings for migration to simplified initialization mode  Not Run
Check for non-continuous signals driving derivative ports  Not Run
Check data store block sample times for modeling errors  Not Run
Check for potential ordering issues involving data store access  Not Run
Identify unit mismatches in the model  Not Run
Identify automatic unit conversions in the model  Not Run
Identify disallowed unit systems in the model  Not Run
Identify undefined units in the model  Not Run

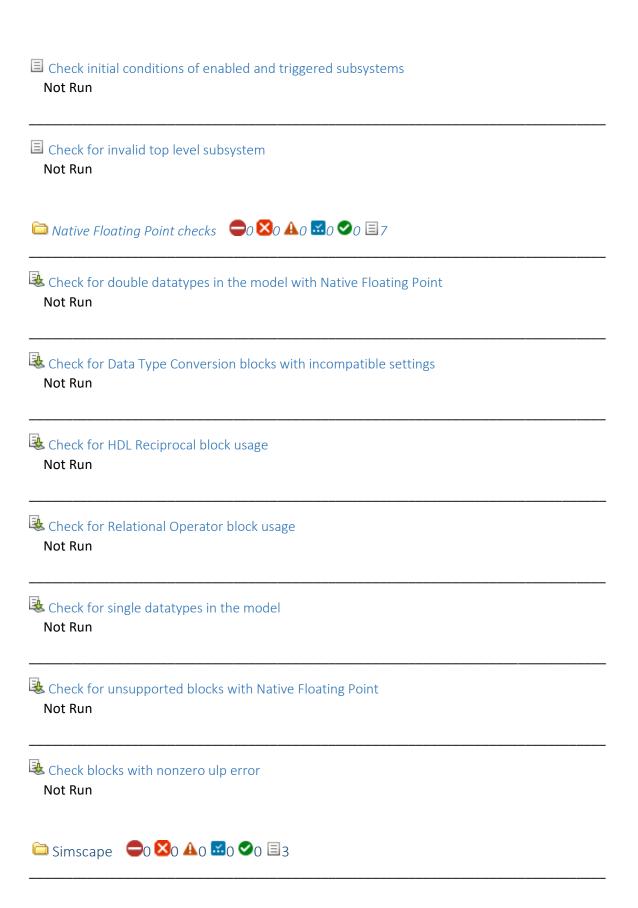
ldentify ambiguous units in the model  Not Run
Identify questionable operations for strict single-precision design  Not Run
© Simulink Coder © №0 №0 №0 © 19
■ Identify blocks using one-based indexing Not Run
☐ Check solver for code generation  Not Run
Check for blocks not supported by code generation  Not Run
Check for model reference configuration mismatch  Not Run
Check code generation identifier formats used for model reference  Not Run
Check for relative execution order change for Data Store Read and Data Store Write blocks  Not Run
Check reuse of subsystem code  Not Run
Check sample times and tasking mode

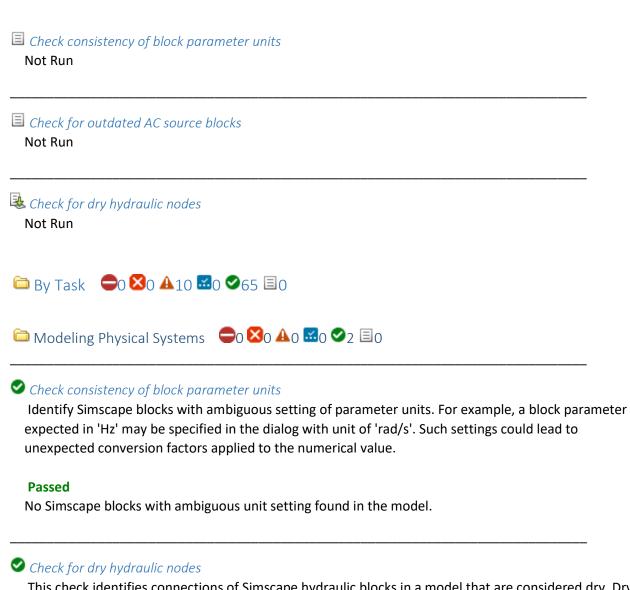
Not Run

HDL Coder
Checks for blocks and block settings $\bigcirc$ 0 $lack O$ 0 $lack O$ 0 $lack O$ 10
Check for unsupported blocks Not Run
Check for HDL Reciprocal block usage Not Run
Check for MATLAB Function block settings  Not Run
Check for obsolete Unit Delay Enabled/Resettable blocks Not Run
Check for infinite and continuous sample time sources  Not Run
Check for unsupported storage class for signal objects  Not Run
Check for Stateflow chart settings  Not Run

Check for large matrix operations  Not Run
Check for blocks that have nonzero output latency  Not Run
$\bigcirc$ Industry standard checks $\bigcirc$
☐ Check architecture name  Not Run
Check clock settings Not Run
Check clock, reset, and enable signals  Not Run
Check file extension Not Run
Check generics Not Run
☐ Check naming conventions  Not Run
☐ Check package file names  Not Run
☐ Check signal and port names  Not Run

☐ Check entity and architecture  Not Run
☐ Check module/entity names  Not Run
☐ Check top-level subsystem/port names  Not Run
lacktriangle Model configuration checks $lacktriangle$ 0 $la$
☐ Check delay balancing setting  Not Run
☐ Check for global reset setting for Xilinx and Altera devices  Not Run
☐ Check inline configurations setting  Not Run
☐ Check for model parameters suited for the HDL code generation  Not Run
☐ Check for visualization settings  Not Run
Check algebraic loops  Not Run





This check identifies connections of Simscape hydraulic blocks in a model that are considered dry. Dry nodes physically represent a hydraulic segment modeled as an incompressible fluid.

#### **Passed**

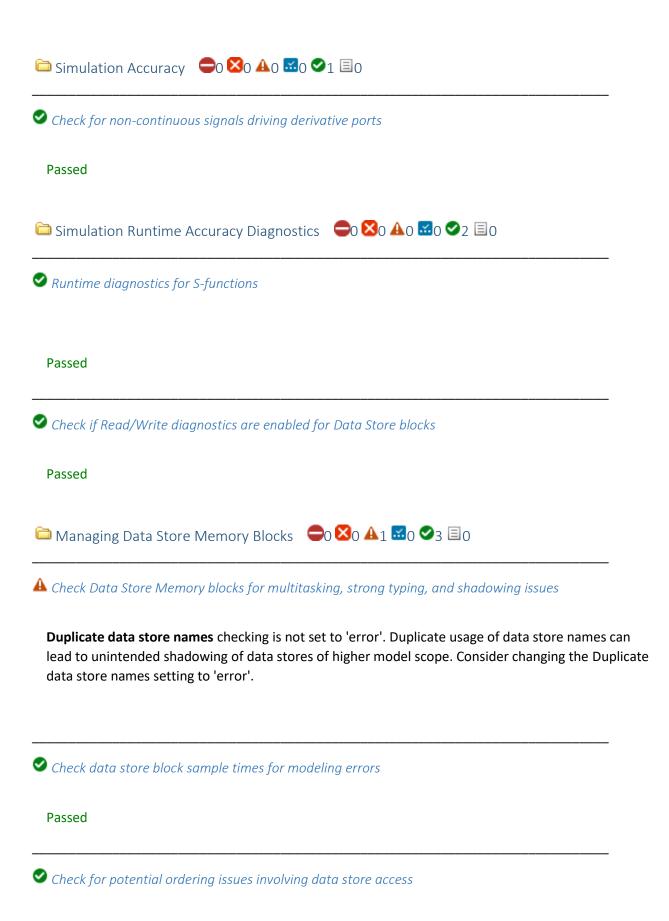
Check has passed. No dry hydraulic nodes found.



☑ Identify Environment Controller blocks to be replaced with Variant Source blocks

#### **Passed**

The model does not contain any Environment Controller blocks.



Check for relative execution order change for Data Store Read and Data Store Write blocks

The system does not have any Data Store Read or Data Store Write blocks.



# **⊘** Check Model History properties

### **Check models for edited Model History property values**

Check that parameters in the Model Properties dialog History pane use the default tags. In the MDL file format you can configure some model properties to make use of source control tool keyword substitution. If you save your model in SLX format, source control tools cannot perform keyword substitution. Any information in the model file from such keyword substitution is cached when you first save the MDL file as SLX, and is never updated again. The Model Properties History pane and any Model Info blocks in your model show stale information from then on.

#### **Passed**

This model uses the default value for property ModifiedByFormat.

This model uses the default value for property ModifiedDateFormat.

#### **Passed**

This model uses the default value for property ModelVersionFormat.





There are no user-defined S-functions in the model.



# ☑ Identify unit mismatches in the model

Check for unit mismatches in the model.

#### **Passed**

No unit mismatches found.

☑ Identify automatic unit conversions in the model Check for automatic unit conversions. **Passed** No automatic unit conversions found. ☑ Identify disallowed unit systems in the model Check for disallowed unit systems. **Passed** No disallowed unit systems were found. Identify undefined units in the model Check for undefined units. **Passed** No undefined units were found. ☑ Identify ambiguous units in the model Check for ambiguous units. **Passed** No ambiguous units were found. ☐ Modeling Signals and Parameters using Buses ☐0 ☎0 ▲1 ☎0 ♥2 월0 **⊘** Check for optimal bus virtuality Passed **⊘** Check structure parameter usage with bus signals This test is skipped because it requires an activated Simulink Coder product

⚠ Check bus signals treated as vectors

### Bus signal treated as vector

Identify bus signals in the model that are treated as vectors by the Simulink software.

# Warning

The model uses bus signals properly. However, the model is not configured to detect future changes that might result in improper bus signal usage.

#### **Recommended Action**

To detect these changes, in the Configuration Parameters dialog box, set the Bus signal treated as **vector** diagnostic to error.

Buses - Bus signal treated as vector







A Check optimization settings

Check optimization settings

# Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommended Values
Warning	StateBitsets	off	on
Warning	DataBitsets	off	on

## **Recommended Action**

Follow the links in the result table to modify the model configuration parameters.



Check the model for blocks configured for one-based indexing

Passed All blocks in the model use zero-based indexing.	
Identify questionable software environment specifications  Passed	
Identify lookup table blocks that generate expensive out-of-range checking code Passed	
✓ Identify questionable code instrumentation (data I/O) Passed	
<ul> <li>Check output types of logic blocks         Identify logic blocks that are outputting non-Boolean data types.     </li> <li>Passed         All logic blocks are being used appropriately.     </li> </ul>	
Check configuration parameters for generation of inefficient saturation code Passed	
✓ Identify blocks that generate expensive rounding code Check for expensive rounding operations in multiplication and division Passed	
Check Optimization and Hardware Implementation settings (Lookup Blocks)  Passed	
Check for expensive rounding in a data type conversion  Passed	

	Check for expensive rounding modes in the model		
	Passed		
~	Identify questionable fixed-point operations  Check for multiword operations		
	Passed		
	Check for expensive multiplication code		
	Passed		
	Check for expensive division code		
	Passed		
	Identify lookup blocks with uneven breakpoint spacing  Passed		
	Check for expensive pre-lookup division		
	Passed		
	Check for expensive data type conversions		
	Passed		
	Check for fixed-point comparisons with predetermined results  Passed		
	Check for expensive binary comparison operations		
	Passed		

Check for expensive fixed-point types			
Passed			
Identify blocks that generate expensive fixed-point and saturation code  Identify Sum blocks for questionable fixed-point operations			
Passed			
Identify Relational Operation blocks for questionable fixed-point operations			
Passed			
Identify Data Type Conversion Inherited blocks for questionable fixed-point operat	 ions		
Passed			
Identify Switch blocks for questionable fixed-point operations			
Passed			
Identify Logic blocks for questionable fixed-point operations			
Passed			
Identify Saturate blocks for questionable fixed-point operations			
Passed			

Identify Min Max blocks for questionable fixed-point operations				
Passed				
Identify Discrete Integrator blocks for questionable fixed-point operations				
Passed				
Identify Compare To Constant blocks for questionable fixed-point operations				
Passed				
Identify Lookup Table blocks for questionable fixed-point operations				
identify Lookup Table blocks for questionable fixed-point operations				
Passed				
Identify blocks that will invoke net slope computation				
Passed				
Identify Product blocks that are less efficient				
Passed				
1 43364				
Check for expensive saturation code				
Passed				

**⊘** Identify blocks generating inefficient algorithms

### **Passed**

No inefficient algorithms found in the model.



A Identify questionable operations for strict single-precision design

Check model settings related to single-precision design

This check verifies the status of model settings that will help you achieve a strict single-precision design.

### Warning

The following model settings are non-optimal to a single-precision design:

Model Name	Configuration Parameter	Current Value	Recommended Value
Project_v2	Default for underspecified data type	double	single

### **Check for double precision operations**

This check identifies blocks that introduce double-precision operations. For each block that the check identifies, make sure that its port data types and intermediate settings are set correctly.

#### **Passed**

No double-precision operations were found.

in Migrating to Simplified Initialization mode 
in Migrating to Simplified Initializ



Ø	Check	usage	of Merge	blocks
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# **Check usage of Merge blocks**

This check finds and reports issues related to merge blocks for migrating to simplified initialization mode.

#### See Also

- Check usage of Merge blocks
- Underspecified initialization detection

**Passed** 

# **⊘** Check usage of Outport blocks

# **Check usage of Outport blocks**

This check finds and reports issues related to Outport blocks and Conditional Subsystems for migrating to simplified initialization mode.

#### See Also

- Check usage of Outport blocks
- Underspecified initialization detection

**Passed** 

**⊘** Check usage of Discrete-Time Integrator blocks

**Check usage of Discrete-Time Integrator blocks** 

This check finds and reports issues related to Discrete-Time Integrator blocks for migrating to simplified initialization mode

#### See Also

- Check usage of Discrete-Time Integrator blocks
- Underspecified initialization detection

#### **Passed**



This check finds and reports model level messages for migrating to simplified initialization mode.

#### See Also

- Check model settings for migration to simplified initialization mode
- Underspecified initialization detection

#### **Passed**

© Row-Major Code Generation © **2**0 **2**0 **4**1 **3**0 **2**2 **3**0



**⊘** *Identify blocks generating inefficient algorithms* 

No inefficient algorithms found in the model.

**A** Check for blocks not supported for row-major code generation Identify blocks not supported by row-major code generation. Warning The following blocks do not support row-major code generation: Project\_v2/Lamp Project\_v2/Side Lights ☑ Identify TLC S-Functions with unset array layout List all S-Functions which have SSArrayLayout set to SS\_UNSET. These S-Functions can have numerical implications in the generated code. **Passed** No TLC S-Functions found with SSArrayLayout set to SS UNSET. **⊘** Check for model reference configuration mismatch **Passed** Check diagnostic settings ignored during accelerated model reference simulation The configuration parameter settings passed the check. Check code generation identifier formats used for model reference The configuration parameter settings passed the check. Check for parameter tunability information ignored for referenced models **Passed** 

Check for implicit signal resolution **Passed** A Check bus signals treated as vectors Bus signal treated as vector Identify bus signals in the model that are treated as vectors by the Simulink software. Warning The model uses bus signals properly. However, the model is not configured to detect future changes that might result in improper bus signal usage. **Recommended Action** To detect these changes, in the Configuration Parameters dialog box, set the Bus signal treated as vector diagnostic to error. Buses - Bus signal treated as vector **⊘** Check root model Inport block specifications Passed **⊘** Check for large number of function arguments from virtual bus across model reference boundary No referenced models found. ☐ Managing Library Links And Variants ☐0 ☎0 ♣0 ☎0 ☎4 월0 **☑** Identify disabled library links **Passed** Identify parameterized library links Passed **⊘** Identify unresolved library links Passed

Identify configurable subsystem blocks in the model for converting to variant subsystem blocks. Identify and upgrade Configurable Subsystem blocks in the model or subsystem level.

#### **Passed**

No configurable subsystem blocks found.



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Check Delay, Unit Delay and Zero-Order Hold blocks for rate transition

#### **Passed**

The model does not contain Delay, Unit Delay or Zero-Order Hold blocks that perform rate transition.



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⚠ Check configuration parameters for MISRA C:2012

Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

### Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Statu s	Parameter	Current Value	Recommended Values	Prerequisites
Warni ng	Model Verification block enabling (AssertControl)	UseLocalSet tings	DisableAll	
D - Warni ng	UtilityFuncGeneration	Auto	Shared location	

Warni ng	GenerateSharedConstants	Prerequisite constraint not met.	off	UtilityFuncGen eration
D - Warni ng	SystemTargetFile	Non-ERT based target	ERT based target	
Warni ng	SupportContinuousTime	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	SupportNonInlinedSFcns	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	MatFileLogging	on	off	
Warni ng	ParenthesesLevel	Prerequisite constraint not met.	Standards, Maximum	SystemTargetFil e
Warni ng	CastingMode	Prerequisite constraint not met.	Standards	SystemTargetFil e
Warni ng	Internalldentifier	Prerequisite constraint not met.	Shortened	SystemTargetFil e
Warni ng	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfI ntegersOnly	
Warni ng	EnableSignedLeftShifts	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	EnableSignedRightShifts	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	Inf or NaN block output (SignalInfNanChecking)	none	warning	

Warni ng	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAllo c)	on	off	
Warni ng	Undirected event broadcasts (SFUndirectedBroadcastEve ntsDiag)	warning	error	
Warni ng	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warni ng	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warni ng	MATLABFcnDesc	Prerequisite constraint not met.	on	GenerateComm ents, SystemTargetFil e
Warni ng	InstructionSetExtensions	SSE2	None	

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# **Recommended Action**

Modify the configuration parameters listed above to the recommended values.

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✔ Check for blocks not recommended for C/C++ production code deployment Passed

	seck for blocks not recommended for MISRA C:2012
	eck for unsupported block names sed
	sed
	eck for switch case expressions without a default case ntify switch case expressions that do not have a default case.
	sed witch case expressions have default cases.
lde Pas	eck for missing error ports in AUTOSAR receiver interfaces ntify AUTOSAR receiver interface ports that do not have a matching error port.  sed del is not configured as an AUTOSAR target.
lde Pas	eck for bitwise operations on signed integers ntify bitwise operations on signed integers.  sed bitwise operations on signed integers found.
Che	eck for recursive function calls ntify function calls that are recursive.
	sed ecursive function calls found.



No equality or inequality operations on floating-point values found.

Check for missing const qualifiers in model functions

Identify missing const qualifiers in model functions.

#### **Passed**

Model does not use customized model functions.

# Check integer word lengths

Identify integer word length that are not compliant with hardware implementation settings.

#### **Passed**

All used integer word length are compliant with hardware implementation settings.

Check bus object names that are used as bus element names

Identify bus object names that are used as bus element names.

#### **Passed**

No bus object names are used as bus element names.



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**A** Check configuration parameters for secure coding standards

Identify configuration parameters that might impact secure coding standards compliant code generation.

# Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Status	Parameter	Current Value	Recommende d Values	Prerequisites
Warnin	Model Verification block enabling (AssertControl)	UseLocalSetting s	DisableAll	
D - Warnin g	SystemTargetFile	Non-ERT based target	ERT based target	
Warnin	SupportContinuousTime	Prerequisite constraint not met.	off	SystemTargetFile
Warnin	SupportNonInlinedSFcns	Prerequisite constraint not met.	off	SystemTargetFile
Warnin	MatFileLogging	on	off	
Warnin	EnableSignedLeftShifts	Prerequisite constraint not met.	off	SystemTargetFile
Warnin	EnableSignedRightShifts	Prerequisite constraint not met.	off	SystemTargetFile
Warnin	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warnin	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAlloc)	on	off	
Warnin	Undirected event broadcasts (SFUndirectedBroadcastEventsDiag)	warning	error	
Warnin	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	

	Enable run-time recursion for	on	off	
Warnin	MATLAB functions			
g	(EnableRuntimeRecursion)			
	MATLABFcnDesc	Prerequisite	on	
Warnin		constraint not		GenerateComment
g		met.		s, SystemTargetFile

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### **Recommended Action**

Modify the configuration parameters listed above to the recommended values.

**⊘** Check for blocks not recommended for C/C++ production code deployment

**Passed** 

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Check for blocks not recommended for secure coding standards

**Passed** 

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Check usage of Assignment blocks

**Passed** 

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Check for switch case expressions without a default case

Identify switch case expressions that do not have a default case.

#### **Passed**

All switch case expressions have default cases.

Check for bitwise operations on signed integers

Identify bitwise operations on signed integers.

#### **Passed**

No bitwise operations on signed integers found.

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• Check for equality and inequality operations on floating-point values

Identify equality and inequality operations on floating-point values.

#### **Passed**

No equality or inequality operations on floating-point values found.

**⊘** Check integer word lengths

Identify integer word length that are not compliant with hardware implementation settings.

#### Passed

All used integer word length are compliant with hardware implementation settings.





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⚠ Check configuration parameters for MISRA C:2012

Identify configuration parameters that might impact MISRA C:2012 compliant code generation.

### Warning

The model configuration parameters are not set to the recommended values specified in the data file.

Statu s	Parameter	Current Value	Recommended Values	Prerequisites
Warni ng	Model Verification block enabling (AssertControl)	UseLocalSet tings	DisableAll	

D - Warni ng	UtilityFuncGeneration	Auto	Shared location	
Warni ng	GenerateSharedConstants	Prerequisite constraint not met.	off	UtilityFuncGen eration
D - Warni ng	SystemTargetFile	Non-ERT based target	ERT based target	
Warni ng	SupportContinuousTime	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	SupportNonInlinedSFcns	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	MatFileLogging	on	off	
Warni ng	ParenthesesLevel	Prerequisite constraint not met.	Standards, Maximum	SystemTargetFil e
Warni ng	CastingMode	Prerequisite constraint not met.	Standards	SystemTargetFil e
Warni ng	InternalIdentifier	Prerequisite constraint not met.	Shortened	SystemTargetFil e
Warni ng	Use division for fixed-point net slope computation (UseDivisionForNetSlopeComputation)	off	on, UseDivisionForReciprocalsOfI ntegersOnly	
Warni ng	EnableSignedLeftShifts	Prerequisite constraint not met.	off	SystemTargetFil e
Warni ng	EnableSignedRightShifts	Prerequisite constraint not met.	off	SystemTargetFil e

Warni ng	Inf or NaN block output (SignalInfNanChecking)	none	warning	
Warni ng	Dynamic memory allocation in MATLAB functions (MATLABDynamicMemAllo c)	on	off	
Warni ng	Undirected event broadcasts (SFUndirectedBroadcastEve ntsDiag)	warning	error	
Warni ng	Compile-time recursion limit for MATLAB functions (CompileTimeRecursionLimit)	50	0	
Warni ng	Enable run-time recursion for MATLAB functions (EnableRuntimeRecursion)	on	off	
Warni ng	MATLABFcnDesc	Prerequisite constraint not met.	on	GenerateComm ents, SystemTargetFil e
Warni ng	InstructionSetExtensions	SSE2	None	

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# **Recommended Action**

Modify the configuration parameters listed above to the recommended values.



□ Upgrading to the Current Simulink Version □0 🖾0 🗚1 🚾0 💇0 🗏0



▲ Open the Upgrade Advisor

# Warning

To check for upgrade issues, open the Upgrade Advisor.

### **Recommended Action**

Click the link below to close the Model Advisor and open the Upgrade Advisor for Project\_v2. Open the Upgrade Advisor