

API Changes							
Method name	Old value (840)	New value (850)	Marked backward compatible in 840	Interface (840)	Interface (850)	Rationale for change	Impact
Added Optional Arguments							
ESMF_Initialize	N/A	configFilenameFromArgNum	yes	16.4.1	16.4.1	Allows specification of the ESMF configuration file used during ESMF_Initialize() via command line argument.	No impact.
ESMF_Initialize	N/A	configKey	yes	16.4.1	16.4.1	Supports locating the ESMF_Initialize() options in a nested structure of a YAML configuration file.	No impact.
ESMF_FieldGet	N/A	isESMFAllocated	yes	26.6.45	26.6.52	Supports user query of whether ESMF or user is responsible for the data allocation referenced by the object.	No impact.
ESMF_FieldRegridStore	N/A	srcTermProcessing	yes	26.6.61	26.6.68	Enables the user to control how many terms are summed on the source during the SMM calculation and, as a consequence, also enables the user to control the bit-for-bitness of the calculation.	No impact.
ESMF_FieldRegridStore	N/A	pipeLineDepth	yes	26.6.61	26.6.68	Enables the user to control the pipeline depth of the SMM calculation.	No impact.
ESMF_ArrayGet	N/A	isESMFAllocated	yes	28.5.18	28.5.18	Supports user query of whether ESMF or user is responsible for the data allocation referenced by the object.	No impact.
ESMF_LocalArrayGet	N/A	isESMFAllocated	yes	29.3.9	29.3.9	Supports user query of whether ESMF or user is responsible for the data allocation referenced by the object.	No impact.
Added Methods							
ESMF_FieldCreate	N/A	Refer to column A	N/A	N/A	26.6.5	To allow Field creation from the new generic geometry class (ESMF_Geom)	No impact.
ESMF_FieldCreate	N/A	Refer to column A	N/A	N/A	26.6.6	To allow Field creation from the new generic geometry class (ESMF_Geom)	No impact.
ESMF_FieldCreate	N/A	Refer to column A	N/A	N/A	26.6.7	To allow Field creation from the new generic geometry class (ESMF_Geom)	No impact.
ESMF_FieldCreate	N/A	Refer to column A	N/A	N/A	26.6.8	To allow Field creation from the new generic geometry class (ESMF_Geom)	No impact.
ESMF_FieldEmptyComplete	N/A	Refer to column A	N/A	N/A	26.6.34	To allow Field completion from the new generic geometry class (ESMF_Geom)	No impact.
ESMF_FieldEmptyComplete	N/A	Refer to column A	N/A	N/A	26.6.35	To allow Field completion from the new generic geometry class (ESMF_Geom)	No impact.
ESMF_FieldEmptySet	N/A	Refer to column A	N/A	N/A	26.6.45	To allow the new generic geometry class (ESMF_Geom) to be set into a Field	No impact.
ESMF_InfoSet()	N/A	Refer to column A	N/A	N/A	40.4.26	Allows transfer of key/values pairs from ESMF_HConfig object to ESMF_Info.	No impact.
ESMF_ConfigGet	N/A	Refer to column A	N/A	N/A	47.3.9	Supports access to ESMF_HConfig object held by ESMF_Config.	No impact.
ESMF_ConfigLog	N/A	Refer to column A	N/A	N/A	47.3.17	Supports writing ESMF_Config contents to the ESMF Log.	No impact.
Arguments with Behavioral Changes							
ESMF_FieldBundleWrite	fileName: For multi-tile Fields, '#' is the place-holder for the tile number	fileName: For multi-tile Fields, "" is the place-holder for the tile number		25.5.39	25.5.39	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Fields must now use ''.
ESMF_FieldWrite	fileName: For multi-tile Fields, '#' is the place-holder for the tile number	fileName: For multi-tile Fields, "" is the place-holder for the tile number		26.6.75	26.6.82	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Fields must now use ''.
ESMF_ArrayBundleWrite	fileName: For multi-tile Arrays, '#' is the place-holder for the tile number	fileName: For multi-tile Arrays, "" is the place-holder for the tile number		27.5.27	27.5.27	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Arrays must now use ''.

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ESMF_ArrayWrite	fileName: For multi-tile Arrays, "#" is the place-holder for the tile number	fileName: For multi-tile Arrays, "" is the place-holder for the tile number		28.5.47	28.5.47	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Arrays must now use ''.
ESMF_FieldBundleRead	fileName: For multi-tile Fields, "#" is the place-holder for the tile number	fileName: For multi-tile Fields, "" is the place-holder for the tile number		25.5.19	25.5.19	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Fields must now use ''.
ESMF_FieldRead	fileName: For multi-tile Fields, "#" is the place-holder for the tile number	fileName: For multi-tile Fields, "" is the place-holder for the tile number		26.6.53	26.6.60	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Fields must now use ''.
ESMF_ArrayBundleRead	fileName: For multi-tile Arrays, "#" is the place-holder for the tile number	fileName: For multi-tile Arrays, "" is the place-holder for the tile number		27.5.16	27.5.16	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Arrays must now use ''.
ESMF_ArrayRead	fileName: For multi-tile Arrays, "#" is the place-holder for the tile number	fileName: For multi-tile Arrays, "" is the place-holder for the tile number		28.5.27	28.5.27	This change was needed to support ESMF Config files, where '#' is treated as the start of a comment.	Code that previously used '#' in the file name for multi-tile Arrays must now use ''.
New Classes							
ESMF_Geom	N/A	N/A	N/A	N/A	35	Wrapper class to enable geometric information to be operated on generically (e.g. passed through a system without having to declare a specific variable for each ESMF geometry type).	No impact.
ESMF_HConfig	N/A	N/A	N/A	N/A	48	Hierarchical configuration class providing complete YAML 1.2 support through the Fortran API.	No impact.
Deprecated Classes, Methods, Arguments							
To be removed in 9.0.0							
Deprecated Classes							
<i>deprecated since 8.1.0:</i>							
ESMF_Attribute	N/A	N/A	No	55	55	The underlying implementation for metadata storage has changed and is available through the native ESMF_Info API.	Code that uses the legacy ESMF_Attribute API through derived type, methods, or named constants should migrate to use the ESMF_Info class API.
Deprecated Methods							
<i>deprecated since 5.3.1:</i>							
ESMF_StateRemove	N/A	N/A	yes	21.7.15	21.7.15	A different overload of the method exists that is more consistent with the overall API.	Code that uses the scalar version of ESMF_StateRemove() should change to the list version.
Deprecated Arguments							
<i>deprecated since 8.5.0:</i>							
ESMF_ConfigLoadFile	delayout	delayout	yes	46.3.15	47.3.16	This argument was never used internally, and it is unclear what the original intention was.	Code that currently passes the "delayout" argument into ESMF_ConfigLoadFile should be changed to not pass this argument.
<i>deprecated since 8.1.0:</i>							
ESMF_FieldBundleSMM	zeroregion	zeroregion	yes	25.5.33	25.5.33	Replaced with zeroregionflag for consistency.	Code that uses the "zeroregion" argument should be changed to using the "zeroregionflag" argument.

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ESMF_FieldRegridStore	weights, indices	weights, indices	yes	26.6.60	26.6.67	Replaced with factorList and factorIndexList for consistency.	Code that uses the "weights" argument should be changed to using the "factorList" argument. Code that uses the "indices" argument should be changed to using the "factorIndexList" argument.
ESMF_ArrayBundleSMM <i>deprecated since 5.2.0rp1:</i>	zeroregion	zeroregion	yes	27.5.23	27.5.23	Replaced with zeroregionflag for consistency.	Code that uses the "zeroregion" argument should be changed to using the "zeroregionflag" argument.
ESMF_ArrayGet	localDeList	localDeList	yes	28.5.18	28.5.18	Replaced with localDeToDeMap for consistency.	Code that uses the "localDeList" argument should be changed to using the "localDeToDeMap" argument.