

API Changes							
Method name	Old value (710r)	New value (800)	Marked backward compatible in 710r	Interface (710r)	Interface (800)	Rationale for change	Impact
Added Optional Arguments							
ESMF_RegridWeightGen	N/A	extrapNumLevels	No	24.3.1	24.3.1	For level based extrapolation methods (e.g. ESMF_EXTRAPMETHOD_CREEP) this argument allows the user to set how many levels to extrapolate.	No impact.
ESMF_RegridWeightGen	N/A	extrapNumLevels	No	24.3.2	24.3.2	For level based extrapolation methods (e.g. ESMF_EXTRAPMETHOD_CREEP) this argument allows the user to set how many levels to extrapolate.	No impact.
ESMF_FileRegrid	N/A	dstLoc	No	24.3.3	24.3.3	The new argument specifies the stagger location of the destination variable if the destination grid is in UGRID format, the regridding method is non-conservative and the destination variable does not exist in the grid file.	No impact.
ESMF_FileRegrid	N/A	srcDataFile	No	24.3.3	24.3.3	The new argument specifies the source data file name for the source grid in GRIDSPEC Mosaic format	No impact.
ESMF_FileRegrid	N/A	dstDataFile	No	24.3.3	24.3.3	The new argument specifies the destination data file name for the destination grid in GRIDSPEC Mosaic format	No impact.
ESMF_FileRegrid	N/A	tileFilePath	No	24.3.3	24.3.3	The new argument specifies the file path for the grid tile files and the data files when the source or destination grid is in GRIDSPEC Mosaic format. When specified, it overwrites the path defined in the Mosaic file.	No impact.
ESMF_FieldBundleGet	N/A	isPacked	Yes	25.5.8	25.5.10	The new argument allows the user check if the fieldBundle is packed	No impact.
ESMF_FieldBundleHaloRelease	N/A	noGarbage	Yes	25.5.12	25.5.15	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldBundleRedistRelease	N/A	noGarbage	Yes	25.5.18	25.5.21	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldBundleRegridRelease	N/A	noGarbage	Yes	25.5.22	25.5.25	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldBundleRegridStore	N/A	extrapNumLevels	Yes	25.5.23	25.5.26	For level based extrapolation methods (e.g. ESMF_EXTRAPMETHOD_CREEP) this argument allows the user to set how many levels to extrapolate.	No impact.
ESMF_FieldBundleSMMRelease	N/A	noGarbage	Yes	25.5.31	25.5.34	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldCreate	N/A	vm	Yes	26.6.7	26.6.7	Support object creation on a different VM than that of the current context.	No impact.
ESMF_FieldCreate	N/A	vm	No	26.6.17	26.6.17	Support object creation on a different VM than that of the current context.	No impact.
ESMF_FieldEmptyCreate	N/A	vm	Yes	26.6.38	26.6.38	Support object creation on a different VM than that of the current context.	No impact.
ESMF_FieldFill	N/A	param114	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.

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ESMF_FieldFill	N/A	param2I4	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param3I4	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param1R4	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param2R4	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param3R4	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param1R8	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param2R8	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldFill	N/A	param3R8	No	26.6.43	26.6.43	Additional numerical parameter.	No impact.
ESMF_FieldHaloRelease	N/A	noGarbage	Yes	26.6.49	26.6.49	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldRedistRelease	N/A	noGarbage	Yes	26.6.54	26.6.55	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldRegridRelease	N/A	noGarbage	Yes	26.6.58	26.6.59	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_FieldRegridStore	N/A	extrapNumLevels	Yes	26.6.59	26.6.60	For level based extrapolation methods (e.g. ESMF_EXTRAPMETHOD_CREEP) this argument allows the user to set how many levels to extrapolate.	No impact.
ESMF_FieldSMMRelease	N/A	noGarbage	Yes	26.6.64	26.6.66	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_MeshGetFieldBounds	N/A	meshLoc	No	26.7.3	26.7.3	Allow the user select which mesh location (e.g. nodes) for which to get bounds information.	No impact.
ESMF_ArrayBundleHaloRelease	N/A	noGarbage	Yes	27.5.12	27.5.12	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_ArrayBundleRedistRelease	N/A	noGarbage	Yes	27.5.18	27.5.18	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_ArrayBundleSMMRelease	N/A	noGarbage	Yes	27.5.24	27.5.24	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_ArrayCreate	N/A	pinflag	Yes	28.5.11	28.5.11	Support DE sharing between PETS on the same single system image (SSI).	No impact.
ESMF_ArrayCreate	N/A	pinflag	Yes	28.5.12	28.5.12	Support DE sharing between PETS on the same single system image (SSI).	No impact.
ESMF_ArrayCreate	N/A	pinflag	Yes	28.5.13	28.5.13	Support DE sharing between PETS on the same single system image (SSI).	No impact.
ESMF_ArrayCreate	N/A	pinflag	Yes	28.5.14	28.5.14	Support DE sharing between PETS on the same single system image (SSI).	No impact.
ESMF_ArrayGet	N/A	ssiLocalDeCount	Yes	28.5.18	28.5.18	Support DE sharing between PETS on the same single system image (SSI).	No impact.
ESMF_ArrayGet	N/A	vm	Yes	28.5.18	28.5.18	Support object creation on a different VM than that of the current context.	No impact.
ESMF_ArrayHaloRelease	N/A	noGarbage	Yes	28.5.23	28.5.23	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.

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ESMF_ArrayRedistRelease	N/A	noGarbage	Yes	28.5.29	28.5.29	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_ArraySMMRelease	N/A	noGarbage	Yes	28.5.38	28.5.38	Allow an object to be completely destroyed without leaving a remnant in the garbage collection.	No impact.
ESMF_GridCreate	N/A	coordTypeKind	No	31.6.13	31.6.13	The argument specifies the type/kind of the grid coordinates.	No impact.
ESMF_GridCreate	N/A	deLayout	No	31.6.14	31.6.14	This argument allows user to provide a non-default DELayout to specify the distribution of DEs across PETS.	No impact.
ESMF_GridCreate	N/A	coordTypeKind	No	31.6.14	31.6.14	The argument specifies the type/kind of the grid coordinates.	No impact.
ESMF_GridCreateCubedSphere	N/A	transformArgs	No	31.6.27	31.6.27	The argument provides a data structure containing the stretch factor, target longitude, and target latitude to perform a Schmidt transformation on the Cubed-Sphere grid.	No impact.
ESMF_GridCreateMosaic	N/A	coordTypeKind	No	31.6.28	31.6.29	The argument specifies the type/kind of the grid coordinates.	No impact.
ESMF_MeshGet	N/A	nodalDistGridsPresent	No	33.4.15	33.4.17	Meshes can now exist without the nodal DistGrid present.	No impact.
ESMF_MeshGet	N/A	elementDistGridsPresent	No	33.4.15	33.4.17	Meshes can now exist without the element DistGrid present.	No impact.
ESMF_MeshGet	N/A	elemMaskArray	No	33.4.15	33.4.17	Allow user to get mask data for elements.	No impact.
ESMF_MeshGet	N/A	elemAreaArray	No	33.4.15	33.4.17	Allow user to get area data for elements.	No impact.
ESMF_MeshGet	N/A	status	No	33.4.15	33.4.17	Allow user to determine the state of a Mesh object (e.g. empty)	No impact.
ESMF_XGridGet	N/A	sideAGridCount	No	34.6.8	34.6.8	Provide access to the number of side A Grids used to create the XGrid.	No impact.
ESMF_XGridGet	N/A	sideBGridCount	No	34.6.8	34.6.8	Provide access to the number of side B Grids used to create the XGrid.	No impact.
ESMF_XGridGet	N/A	sideAMeshCount	No	34.6.8	34.6.8	Provide access to the number of side A Meshes used to create the XGrid.	No impact.
ESMF_XGridGet	N/A	sideBMeshCount	No	34.6.8	34.6.8	Provide access to the number of side B Meshes used to create the XGrid.	No impact.
ESMF_XGridGet	N/A	elementCount	No	34.6.8	34.6.8	Provide access to the number of elements in the XGrid.	No impact.
ESMF_XGridGet	ngridA	N/A	No	34.6.8	34.6.8	Broken into new finer grained arguments "sideAGridCount" and "sideAMeshCount".	Code using the "ngridA" argument must be changed to use the sum of "sideAGridCount" and "sideAMeshCount".
ESMF_XGridGet	ngridB	N/A	No	34.6.8	34.6.8	Broken into new finer grained arguments "sideBGridCount" and "sideBMeshCount".	Code using the "ngridB" argument must be changed to use the sum of "sideBGridCount" and "sideBMeshCount".
ESMF_DistGridCreate	N/A	balanceflag	Yes	35.6.4	35.6.4	Support rebalancing of the incoming DistGrids decomposition.	No impact.
ESMF_DistGridCreate	N/A	deLayout	Yes	35.6.4	35.6.4	Support changing the layout of DEs across PETS.	No impact.
ESMF_DistGridCreate	N/A	balanceflag	Yes	35.6.5	35.6.5	Support rebalancing of the incoming DistGrids decomposition.	No impact.
ESMF_DistGridCreate	N/A	deLayout	Yes	35.6.5	35.6.5	Support changing the layout of DEs across PETS.	No impact.
ESMF_DistGridGet	N/A	localDeCount	Yes	35.6.14	35.5.15	Provide access to the number of local DEs from the DistGrid level.	No impact.

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ESMF_DistGridGet	N/A	localDeToDeMap	Yes	35.6.14	35.5.15	Provide access to the DE to local DE mapping from the DistGrid level.	No impact.
ESMF_DistGridGet	N/A	de	Yes	35.5.15	35.5.16	Provide access to the number of DEs from the DistGrid level.	No impact.
ESMF_DistGridGet	N/A	tile	Yes	35.5.15	35.5.16	Provide access to the number of local DEs from the DistGrid level.	No impact.
ESMF_LogGet	N/A	indentCount	No	47.7.10	47.7.10	Support message indentation.	No impact.
ESMF_LogGet	N/A	noPrefix	No	47.7.10	47.7.10	Support message prefix.	No impact.
ESMF_LogOpen	N/A	noPrefix	No	47.7.11	47.7.11	Support message prefix.	No impact.
ESMF_LogSet	N/A	indentCount	No	47.7.13	47.7.13	Support message indentation.	No impact.
ESMF_LogSet	N/A	noPrefix	No	47.7.13	47.7.13	Support message prefix.	No impact.
ESMF_VMGet	N/A	ssiCount	Yes	49.5.16	49.5.16	Support message prefix. system images (SSI) - typically synonymous to nodes - of the compute environment. This information is useful when constructing custom petLists.	No impact.
ESMF_VMGet	N/A	ssiMinPetCount	Yes	49.5.16	49.5.16		No impact.
ESMF_VMGet	N/A	ssiMaxPetCount	Yes	49.5.16	49.5.16		No impact.
ESMF_VMGet	N/A	ssiLocalPetCount	Yes	49.5.16	49.5.16		No impact.
ESMF_VMGet	N/A	ssiSharedMemoryEnabledFlag	Yes	49.5.16	49.5.16	Allow the user to query whether ESMF was compiled with support for shared memory access between PETs on the same SSI, e.g. for DE sharing.	No impact.
Changed Arguments							
ESMF_FieldFill	const1	intent(in) :: const	No	26.6.43	26.6.43	Use the correct intent() attribute.	No impact.
ESMF_GridCreate	fileformat	optional :: fileformat	No	31.6.13	31.6.13	Change the argument to optional. If not specified, the method will detect the file format automatically	No impact.
ESMF_GridCreate	fileformat	optional :: fileformat	No	31.6.14	31.6.14	Change the argument to optional. If not specified, the method will detect the file format automatically	No impact.
ESMF_LogGet	type(ESMF_Logical) :: flush	logical :: flush	No	47.7.10	47.7.10	Consistency with LogSet().	Code that calls ESMF_LogGet() with the "flush" argument must be adjusted to declare it of type logical.
Removed Arguments							
ESMF_StatePrint	fileName	N/A	No	21.7.12	21.7.12	Argument was mistakenly made public.	If the argument is specified, it must now be removed.
ESMF_XGridGet	localDeCount	N/A	No	34.6.8	34.6.8	Consistency with ESMF_MeshGet().	Code that calls ESMF_XGridGet() with the "localDeCount" argument must be changed to not specify the argument. Instead the localDeCount should be queried from the underlying DistGrid.
Added Methods							
ESMF_FieldBundleCreate	N/A	N/A	No	N/A	25.5.7	Add packed FieldBundle capability.	No impact.
ESMF_FieldBundleCreate	N/A	N/A	No	N/A	25.5.8	Add packed FieldBundle capability.	No impact.
ESMF_FieldBundleGet	N/A	N/A	No	N/A	25.5.13	Provide access to the packed FieldBundle data allocation.	No impact.
ESMF_ArraySync	N/A	N/A	No	N/A	28.5.45	Synchronization method across PETs required for safe access to shared DEs.	No impact.

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ESMF_GridCreateCubedSphere	N/A	N/A	No	N/A	31.6.28	New method to create a 6-tile Cubed Sphere grid using irregular decomposition. Grid coordinates are generated in the method.	No impact.
ESMF_GridCreateMosaic	N/A	N/A	No	N/A	31.6.30	New method to create a multi-tile grid using irregular decomposition. The grid coordinates and the tile connections are defined in a GRIDSPEC Mosaic file.	No impact.
ESMF_MeshCreate	N/A	N/A	No	N/A	33.4.8	Support creating a Mesh from a Grid.	No impact.
ESMF_MeshEmptyCreate	N/A	N/A	No	N/A	33.4.15	Support creating a Mesh that only holds DistGrid information.	No impact.
ESMF_DistGridCreate	N/A	N/A	No	N/A	35.6.9	Complete the interface with multi-tile entry point.	No impact.
ESMF_DistGridRegDecompSetCubic	N/A	N/A	No	N/A	35.8.1	Provide a simple way to construct regular decomposition descriptors for the common cubic case.	No impact.
ESMF_RouteHandleCreate	N/A	N/A	No	N/A	36.5.2	Support creating a RouteHandle from file.	No impact.
ESMF_RouteHandleWrite	N/A	N/A	No	N/A	36.5.8	Support writing a RouteHandle to file.	No impact.
ESMF_ConfigCreate	N/A	N/A	No	N/A	46.3.5	Instantiate a new Config object from a Config section.	No impact.
ESMF_ConfigFindNextLabel	N/A	N/A	No	N/A	46.3.8	Find a label in Config object starting from current position.	No impact.
ESMF_ConfigPrint	N/A	N/A	No	N/A	46.3.17	Write content of Config object to unit.	No impact.
ESMF_UtilString2Double	N/A	N/A	No	N/A	51.4.7	Convert a string to single precision real.	No impact.
ESMF_UtilString2Real	N/A	N/A	No	N/A	51.4.9	Convert a string to double precision real.	No impact.
ESMF_UtilStringInt2String	N/A	N/A	No	N/A	51.4.10	Convert an interger into string.	No impact.
Removed Methods							
ESMF_XGridGet	N/A	N/A	No	34.6.9	N/A	Consolidate the ESMF_XGridGet() interface.	Code that uses this entry point of ESMF_XGridGet() must be changed to use the remaining ESMF_XGridGet() method.
ESMF_XGridGet	N/A	N/A	No	34.6.10	N/A	Consolidate the ESMF_XGridGet() interface.	Code that uses this entry point of ESMF_XGridGet() must be changed to use the remaining ESMF_XGridGet() method.
Keyword Enforcer Added							
ESMF_RouteHandleDestroy	N/A	N/A	No	36.5.2	36.5.3	Standardize the interface.	Code that uses the "noGarbage" and "rc" arguments now must specify the dummy argument labels.