Compatibility Between ESDM and NetCDF4

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Work Package:	Work Package 4 Exploitability
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1 Files From Directory nc_test4

Filename	Compatible	Almost Compatible	Not Compatible Yet	Almost Incompatible	Incompatible
cdm_sea_soundings.c					✓
test_szip.c					✓
tst_atts1.c					
tst_atts2.c					✓
tst_atts3.c					
tst_atts.c					
tst_attsperf.c					
tst_bug324.c					
tst_camrun.c					
tst_chunks2.c					
tst_chunks3.c					
tst_chunks.c					
tst_compounds2.c					
tst_compounds3.c					
tst_converts2.c					
tst_converts.c					
tst_coords2.c					
tst_coords3.c					
tst_coords.c					
tst_create_files.c					
tst_dims2.c					
tst_dims3.c					
tst_empty_vlen_unlim.c					
tst_endian_fill.c					
tst_enums.c					
tst_files4.c					
tst_files6.c					
tst_files.c					
tst_fill_attr_vanish.c					
tst_fillbug.c					
tst_fills2.c					
tst_fills.c					
tst_grps2.c					
tst_grps.c					
tst_h5_endians.c					
tst_hdf5_file_compat.c					
tst_h_refs.c					
tst_h_scalar.c					
tst_h_strbug.c					
tst_interops5.c					
tst_interops6.c					
tst_interops.c					
tst_large2.c					
tst_large.c					

Table 1.1

Filename	Compatible	Almost Compatible	Not Compatible Yet	Almost Incompatible	Incompatible
tst_mem.c					
tst_mode.c					
tst_opaques.c					
tst_parallel.c					
tst_put_vars.c					
tst_rename2.c					
tst_rename.c					
tst_simplerw_coll_r.c					
tst_strings2.c					
tst_strings.c					
tst_sync.c					
tst_types.c					
tst_udf.c					
tst_unlim_vars.c					
tst_utf8.c					
tst_v2.c					
tst_varms.c					
tst_vars2.c					
tst_vars3.c					
tst_vars4.c					
tst_vars.c					
tst_vl.c					
h5testszip.c	✓				
tst_atts_string_rewrite.c	✓				
tst_elatefill.c	✓				
tst_files3.c	✓				
tst_files5.c	✓				
tst_filterparser.c	✓				
tst_mpi_parallel.c	✓				
tst_rehash.c	✓				
t_type.c	✓				

Table 1.2

Filename	Justification
cdm_sea_soundings.c	ESDM does not support compound datatypes from NetCDF
test_szip.c	NetCDF Feature not supported with ESDM
tst_atts1.c	
tst_atts2.c	ESDM does not support compound datatypes from NetCDF
tst_atts3.c	
tst_atts.c	
tst_attsperf.c	
tst_bug324.c	
tst_camrun.c	
tst_chunks2.c	ESDM does not support chunks from NetCDF
tst_chunks3.c	ESDM does not support chunks from NetCDF
tst_chunks.c	ESDM does not support chunks from NetCDF
tst_compounds2.c	ESDM does not support compound datatypes from NetCDF
tst_compounds3.c	ESDM does not support compound datatypes from NetCDF
tst_converts2.c	
tst_converts.c	
tst_coords2.c	
tst_coords3.c	
tst_coords.c	
tst_create_files.c	
tst_dims2.c	
tst_dims3.c	
tst_empty_vlen_unlim.c	
tst_endian_fill.c	
tst_enums.c	
tst_files4.c	
tst_files6.c	
tst_files.c	
tst_fill_attr_vanish.c	
tst_fillbug.c	
tst_fills2.c	
tst_fills.c	
tst_grps2.c	NOT IMPLEMENTED YET
tst_grps.c	NOT IMPLEMENTED YET
tst_h5_endians.c	NOT IMPLEMENTED YET
tst_hdf5_file_compat.c	
tst_h_refs.c	
tst_h_scalar.c	
tst_h_strbug.c	
tst_interops5.c	
tst_interops6.c	
tst_interops.c	
tst_large2.c	
tst_large.c	

Table 1.3

Filename	Justification
tst_mem.c	
tst_mode.c	NOT IMPLEMENTED YET
tst_opaques.c	NOT IMPLEMENTED YET
tst_parallel.c	
tst_put_vars.c	
tst_rename2.c	
tst_rename.c	
tst_simplerw_coll_r.c	
tst_strings2.c	
tst_strings.c	
tst_sync.c	
tst_types.c	NOT IMPLEMENTED YET
tst_udf.c	
tst_unlim_vars.c	
tst_utf8.c	
tst_v2.c	
tst_varms.c	
tst_vars2.c	
tst_vars3.c	
tst_vars4.c	
tst_vars.c	
tst_vl.c	NOT IMPLEMENTED YET
h5testszip.c	Working
tst_atts_string_rewrite.c	Working
tst_elatefill.c	Working
tst_files3.c	Working
tst_files5.c	Working
tst_filterparser.c	Working
tst_mpi_parallel.c	Working
tst_rehash.c	Working
t_type.c	Working

Table 1.4: Additional comments on ESDM and NETCDF compatibility

File	Not Tested	Not Working Build	Not Working Run	Working
bigmeta.c	✓			
openbigmeta.c	✓			
bm_file.c		✓		
bm_many_atts.c		✓		
bm_many_objs.c		✓		
bm_netcdf4_recs.c		✓		
ref_bzip2.c		✓		
test_filter.c		✓		
test_filter_misc.c		✓		
tst_ar4_3d.c		✓		
tst_ar4_4d.c		✓		
tst_ar4.c		✓		
tst_files2.c		✓		
tst_h_many_atts.c		✓		
tst_knmi.c		✓		
tst_put_vars_two_unlim_dim.c		✓		
tst_utils.c		✓		
tst_compounds.c			✓	
tst_dims.c			✓	
tst_interops4.c			✓	
tst_nc4perf.c			✓	
tst_parallel3.c			✓	
tst_parallel4.c			✓	
tst_parallel5.c			✓	
tst_xplatform2.c			✓	
tst_xplatform.c			✓	

Table 1.5: List of nc_test4 files.

File	Not Tested	Not Working Build	Not Working Run	Working
renamegroup.c				✓
test_szip.c				✓
tst_atts1.c				✓
tst_atts2.c				✓
tst_atts3.c				✓
tst_atts.c				✓
tst_attsperf.c				✓
tst_atts_string_rewrite.c				✓
tst_bug324.c				✓
tst_camrun.c				✓
tst_chunks2.c				✓
tst_chunks3.c				✓
tst_chunks.c				✓
tst_compounds2.c				✓
tst_compounds3.c				✓
tst_converts2.c				✓
tst_converts.c				✓
tst_coords2.c				✓
tst_coords3.c				✓
tst_coords.c				✓
tst_create_files.c				✓
tst_dims2.c				✓
tst_dims3.c				✓
tst_elatefill.c				✓
tst_empty_vlen_unlim.c				✓
tst_endian_fill.c				✓
tst_enums.c				✓
tst_files3.c				✓
tst_files4.c				✓
tst_files5.c				✓
tst_files6.c				✓
tst_files.c				✓
tst_fill_attr_vanish.c				✓
tst_fillbug.c				✓
tst_fills2.c				✓
tst_fills.c				✓
tst_filterparser.c				✓
tst_grps2.c				✓
tst_grps.c				✓
tst_h5_endians.c				✓
tst_hdf5_file_compat.c				✓
tst_h_refs.c				✓
tst_h_scalar.c				✓
tst_h_strbug.c				✓
tst_interops5.c				✓
tst_interops6.c				✓
tst_interops.c				✓
tst_large2.c				✓
tst_large.c				✓
tst_mem.c				✓

Table 1.6: List of nc_test4 files.

File	Not Tested	Not Working Build	Not Working Run	Working
tst_mode.c				✓
tst_mpi_parallel.c				✓
tst_opaques.c				✓
tst_parallel.c				✓
tst_put_vars.c				✓
tst_rehash.c				✓
tst_rename2.c				✓
tst_rename.c				✓
tst_simplerw_coll_r.c				✓
tst_strings2.c				✓
tst_strings.c				✓
tst_sync.c				✓
tst_types.c				✓
tst_udf.c				✓
tst_unlim_vars.c				✓
tst_utf8.c				✓
tst_v2.c				✓
tst_varms.c				✓
tst_vars2.c				✓
tst_vars3.c				✓
tst_vars4.c				✓
tst_vars.c				✓
tst_vl.c				✓
t_type.c				✓

Table 1.7: List of nc_test4 files.

NetCDF TYPE	Number	ESDM Type	ESDM Representation
NC_BYTE	1	SMD_DTYPE_INT8	int8_t
NC_UBYTE	7	SMD_DTYPE_UINT8	uint8_t
NC_CHAR	2	SMD_DTYPE_CHAR	char
NC_SHORT	3	SMD_DTYPE_INT16	int16_t
NC_USHORT	8	SMD_DTYPE_UINT16	uint16_t
NC_INT	4	SMD_DTYPE_INT32	int32_t
NC_LONG	4	SMD_DTYPE_INT32	int32_t
NC_UINT	9	SMD_DTYPE_UINT32	uint32_t
NC_INT64	10	SMD_DTYPE_INT64	int64_t
NC_UINT64	5	SMD_DTYPE_UINT64	uint64_t
NC_FLOAT	11	SMD_DTYPE_FLOAT	float
NC_DOUBLE	6	SMD_DTYPE_DOUBLE	double

Table 1.8: Convertion between ESDM and NetCDF4 datatypes – Datatypes sorted by size.

NetCDF TYPE	Number	ESDM Type	ESDM Representation
NC_BYTE	1	SMD_DTYPE_INT8	int8_t
NC_CHAR	2	SMD_DTYPE_CHAR	char
NC_SHORT	3	SMD_DTYPE_INT16	int16_t
NC_INT	4	SMD_DTYPE_INT32	int32_t
NC_LONG	4	SMD_DTYPE_INT32	int32_t
NC_UINT64	5	SMD_DTYPE_UINT64	uint64_t
NC_DOUBLE	6	SMD_DTYPE_DOUBLE	double
NC_UBYTE	7	SMD_DTYPE_UINT8	uint8_t
NC_USHORT	8	SMD_DTYPE_UINT16	uint16_t
NC_UINT	9	SMD_DTYPE_UINT32	uint32_t
NC_INT64	10	SMD_DTYPE_INT64	int64_t
NC_FLOAT	11	SMD_DTYPE_FLOAT	float

Table 1.9: Convertion between ESDM and NetCDF4 datatypes – Datatypes sorted by NETCDF4 description.