

Subject: MCR-10014, Add a call command to bound_trace_stack_
Author: Gary Dixon
Date: August 08, 2016

Add a new call command, that invokes a subroutine with parameters supplied by arguments given to the call command. This new command will be added to the existing bound_trace_stack_ object segment, since it uses many of the supporting routines in that bound segment. MTB-1002 describes the changes in detail. They may be summarized as follows:

- **call.pl1**: a new command that converts its input arguments into: an entry variable to be called; arguments converted to the parameter type of that entry's parameters.
- **call_entry_info.rd**: a new subroutine that determines an entry's parameter types, from: its calling sequence descriptors which precede the entrypoint in its object segment; or its declaration as provided by get_entry_point_dcl_ subroutine from the files in the declare search paths.
- **call_entry_info.incl.pl1**: a new include file that defines the parameter data returned by call_entry_info.rd.
- **call_status_code_name.pl1**: a subroutine (extracted from probe) that converts a Multics status code into a entry name (e.g., "error_table_\$bad_arg").
- **call_dtype_fcns.incl.pl1**: a new include file containing a set of functions that filter a PL/I parameter descriptor type (one of the constants defined in std_descriptor_types.incl.pl1) by the specific PL/I data attributes it encompasses. This filtering is used by call in converting arguments to match characteristics of a particular subroutine parameter.
- **pl1_symbol_type_fcns.incl.pl1**: a new include file that define subroutines that verify the consistency of attributes selected in the "type" structure defined in pl1_symbol_type.incl.pl1, and apply PL/I default rules to complete those attributes; and display a completed attribute set in a "type" structure as a PL/I declare statement.
- **call_scalar_dcl.rd**: a new subroutine that converts a PL/I declare statement for a parameter into Multics argument descriptor.
- **call_et_alm**: a new Multics error table containing messages needed by call to properly diagnose a variety of argument conversion, size, overflow, and other parameter conversion errors.
- **bound_trace_stack.bind**: the existing bind file, with changes needed to add the call components lists above to bound_trace_stack_.

- **call_test.pl1, call_ei_test.pl1, call_sd_test.pl1, call_test.ec:** testing programs used to exercise the call command and supporting subroutines above. These will be added to bound_trace_stack_.s.archive, but not be compiled or have components in its object archive.
- **call.info:** a new info segment describing the call (cl) command. It will have added name: cl.info
- **pl1.dcl:** a revised copy of the existing >sss>pl1.dcl file that constitutes the default entry in the declare search paths. This change repairs the declaration for: message_segment_\$validate (it ends with one extra right parenthesis).