

opcode	name	arg0	arg1	selector array	descrip
100	goto_op	optable slot of destina- tion			uncond
101	jump_if_zero_op	optable slot of destina- tion			jump if
102	stop_op				immed during in proc
103	call_op	optable slot of procedure			call a s instruc
104	return_op				return caller i
105	execute_op	super instruction table slot	number of arguments		execute structu block s
106	do_op	optable slot of enddo	number of indices = 1	first element is slot of loop index variable	serial d
107	enddo_op		number of indices	first element is slot of loop index variable	marks
108	dosubindex_op	optable slot of enddo- subindex	parent index	first element is slot of loop index variable	serial l
109	enddosubindex_op		parent	first element is slot of loop index variable	marks
110	exit_op				exit cu
111	where_op				
112	pardo_op	optable slot of enddo	number of indices	indices indicated in loop	beginn
113	endpardo_op		number of indices	indices indicated in loop	end of
114	begin_pardo_sec- tion_op				start o
115	end_pardo_section_- op				end of
116	sip_barrier_op				
117	broadcast_static_op	index of static array			broadc value is

118	push_block_selector_op	rank	array table slot	selector slots	push the selector other a given v
119	allocate_op	rank	array_table_slot	block selector indices(may contain wild cards)	allocate
120	deallocate_op	rank	array_table_slot	block selector indices	dealloc
121	allocate_contiguous_op	rank	array_table_slot		allocate contiguous obtained they ha appear upper[
122	deallocate_contiguous_op	rank	array_table_slot		deallocate contiguous obtained they ha appear upper[
123	get_op	array table slot of desired block		selector slots	get block send g (args a
124	put_accumulate_op	array table slot of right hand side	array table slot of left hand side		get right firsts) block t into its
125	put_replace_op	array table slot of right hand side	array table slot of left hand side		get right firsts) block t copy of
126	create_op	array table slot			create are cre
127	delete_op	array table slot			delete
128	int_load_value_op	IntTable slot			loads c sip com

129	int_load_literal_op	value			loads v onto si
130	int_store_op	IntTable slot	opcode of operator, or int_store_op if plain as- signment		remove stack, of given
131	index_load_value_op	IndexTable slot			load cu on the
132	int_add_op				remove control pushes
133	int_subtract_op				remove trol sta the sec control
134	int_multiply_op				remove trol sta pushes
135	int_divide_op				remove trol sta the fir control
136	int_equal_op				==, a stack, n
137	int_nequal_op				!=, arg result i
138	int_ge_op				≥, an stack, n
139	int_le_op				≤, arg result i
140	int_gt_op				≥, args result i
141	int_lt_op				≤, args result i
142	int_neg_op				unary control stack

143	cast_to_int_op				remove stack, c control
144	scalar_load_value_op	array table slot			loads v express
145	scalar_store_op	array table slot of scalar	opcode of operator or scalar_store_op if plain assignment		remove stack, p given s
146	scalar_add_op				remove stack, a pressio
147	scalar_subtract_op				remove stack, s args pu express
148	scalar_multiply_op				remove stack, on exp
149	scalar_divide_op				remove stack, c pushed pressio
150	scalar_exp_op				remove sion st args pu sult on
151	scalar_eq_op				==, ar stack, n
152	scalar_ne_op				!=, arg stack, n
153	scalar_ge_op				≥, arg stack, n
154	scalar_le_op				≤, arg stack, n
155	scalar_gt_op				>, arg stack, n

156	scalar_lt_op				i, args stack, n
157	scalar_neg_op				unary express pressio
158	scalar_sqrt_op				comput sip exp of expr
159	cast_to_scalar_op				remove convert express
160	collective_sum_op	array table slot of lhs scalar			allredu sion sta synchron
161	assert_same_op	array table slot of scalar			checks silon on ter's va
162	tensor_op	lhs rank	lhs array table slot	lhs selector	outer p contract
163	block_copy_op	lhs rank	lhs array table slot	lhs selector	copies stack t is large are sim
164	block_permute_op			permutation	permut the giv block s block s
165	block_fill_op	lhs rank	lhs array table slot	lhs indices	gets va from in block t
166	block_scale_op	lhs rank	lhs array table slot	lhs indices	gets va from in ements

167	block_scale_assign_op	lhs rank	lhs array table slot	lhs indices	gets va from bl instruc of the result i
168	block_scale_accumulate_op	lhs rank	lhs array table slot	lhs indices	gets va from bl instruc of the block
169	block_accumulate_scalar_op	lhs rank	lhs slot	lhs selector indices	gets sc and fro each va
170	block_add_op	lhs rank	lhs array slot	lhs selector	adds t and pu
171	block_subtract_op	lhs rank	lhs array slot	lhs selector	subtrac the res
172	block_contract_op	lhs rank	lhs array slot	lhs selector	contrac in the 1
173	block_contract_accumulate_op	lhs rank	lhs array slot	lhs selector	contrac result i
174	block_contract_to_scalar_op				contrac contrac on the
175	block_load_scalar_op				all indi are sim load it
176	slice_op	lhs rank	lhs array table slot	lhs selector indices	copies perbloc
177	insert_op	lhs rank	lhs array table slot	lhs selector indices	inserts lhs
178	string_load_literal_op	slot in string literal table			loads s stack.
179	print_string_op	append NL if 1			print tl is on tl
180	println_op				print N

181	print_index_op	append NL if 1	index table slot		print o value is
182	print_scalar_op	append NL if 1	array table slot, or un- used if literal		print s epressi
183	print_int_op	append NL if 1	array table slot or unused if literal		print in
184	print_block_op	append NL if 1			print t selector
185	gpu_on_op				
186	gpu_off_op				
187	gpu_allocate_op				
188	gpu_free_op				
189	gpu_put_op				
190	gpu_get_op				
191	gpu_get_int_op				
192	gpu_put_int_op				
193	set_persistent_op	string table slot	array table slot		Marks sistent. program in a fut
194	restore_persistent_op	string_table_slot	array_table_slot		restore given l
195	idup_op				duplica (intege
196	iswap_op				swaps (intege
197	sswap_op				swaps t (scalar
198	invalid_op				