ION Core 4.1.2	y = included	Status: y=included p=please add c=check		
Last Update: 8/1/2023	p = please add			
	c = check			
Modules and its library do not always have one-to-one correspondence to file directory				
Modules	**Status:**	**Executables/Library**	**Description**	**Notes**
ici	y = included	ionadmin		
	y = included	ionwarn		
	y = included	rfxclock		
		file2sdr		
		file2sm		
		ionexit		
		ionlog	utility for redirecting stdin to the ION log file	
	y = included	ionrestart	ionrestart is a utility task that is executed automatically when an ION transaction fails, provided transaction reversibility is enabled (see ionconfig(5)). It should never need to be executed from the command line.	
	y = included	ionscript	script	
		ionsecadmin	ION global security database management interface	
	y = included	ionstart	script	
	y = included	ionstart.awk	script	
	y = included	ionstop	script	

		ionunlock	The ionunlock program is designed to be run when some ION thread has terminated while it is the owner of the node's system mutex, i.e., while in the midst of an SDR transaction. IT MUST NEVER BE RUN AT ANY OTHER TIME as it will totally corrupt a node that is not locked up. The program simply declares itself to be the owner of the incomplete transaction and cancels it, enabling the rest of the system to resume operation	
	y = included	ionwarn	Used for computing congestion forecast at an ION node based on contact plan.	
		ionxnowner	report on which threads are initiating SDR transactions	
	y = included	killm	script to terminate all ION related processes	
ici - utility		psmshell		
	y = included	psmwatch		
		sdr2file		
		sdrmend		
	y = included	sdrwatch		
		sm2file		
		smlistsh		
		smrbtsh		
		tcp2file		

		udp2file		
bpv7	y = included	bpadmin		
	y = included	bpclm		
	y = included	bpclock		
	y = included	bptransit	bptransit is a background "daemon" task that is responsible for presenting to ION's forwarding daemons any bundles that were received from other nodes (i.e., bundles whose payloads reside in Inbound ZCO space) and are destined for yet other nodes. In doing so, it migrates these bundles from Inbound buffer space to Outbound buffer space on the same prioritized basis as the insertion of locally sourced outbound bundles.	
	y = included	bpversion	script to display the bpversion	
	y = included	bpextension	Interfaced to enable adding extension blocks without modifying core ION bp code. bpv7/library/bei.h and bei.c	
	y = included		pbn (previous node)	
	y = included		qos (quality of service)	
	y = included		meb (metadata)	
	y = included		bae (bundle age)	
	y = included		hcb (hop count)	
	y = included		snw (spray and wait)	
	y = included		imc (bundle multicast)	
	y = included		bib (bundle integrity)	
	y = included		bcb (bundle confidentiality)	
			cgrr (cgr route extension)	

			rgr (register route extension)	
bpv7 - ipn	y = included	ipnadmin		
	y = included	ipnadminep		
	y = included	ipnfw		
bpv7 - ipnd		ipnd		
bpv7 - bibe		bibeadmin		
		bibeclo		
bpv7 - bpsec	y = included	bpsecadmin		
bpv7 - brs		brsccla		
		brsscla		
bpv7 - load and go	y = included	lgagent		
	y = included	lgsend		
bpv6 - load and go		lgagent		
		lgsend		
bpv6		bpadmin		
		bpclm		
		bpclock		
		bptransit		

		ipnadmin		
		ipnadminep		
		ipnfw		
		bpversion		
bpv6 - acs		acslist		
bpv6 - brs		brsccla		
		brsscla		
bpv6 - ipn		ipnadmin		
		ipnadminep		
		ipnfw		
bpv6 - ipnd		ipnd		
ams		amsmib		
		amsshell		
		amsstop		
		ramsgate		
bss		bsscounter		
		bssdriver		
		bssrecv		
		bssStreamingApp		
bpv7 - bssp		bsspadmin		
		bsspcli		
		bsspclo		

		bsspclock		
		udpbso		
		udpbsi		
		tcpbso		
		tcpbsi		
bpv6 - bssp		bsspadmin		
		bsspcli		
		bsspclo		
		bsspclock		
		udpbso		
		udpbsi		
		tcpbso		
		tcpbsi		
bpv7 - stcp		stcpcli		
		stcpclo		
bpv6 - stcp	p = please add	stcpcli		
	p = please add	stcpclo		
bpv7 - tcp		tcpbsi		
		tcpsbo		
bpv6 - tcp		tcpbsi		

		tcpsbo		
bpv7 - udp	y = included	udpcli	Add UDP for testing purposes only	
	y = included	udpclo	Add UDP for testing purposes only	
bpv6 - udp		udpcli		
		udpclo		
cfdp		bputa		
		cfdpadmin		
		cfdpclock		
		cfdptest		
		tcputa		
bpv7 - cgr		cgrfetch	script to perform a simulated CGR routing	
bpv6 - cgr		cgrfetch		

bpv7 - cpsd		cpsd	contact plan synchronization daemon	
bpv6 - cpsd		cpsd		
bpv7 - dccp		dccpcli		
		dccpclo		
		dccplsi		
		dccplso		
bpv6 - dccp		dccpcli		
		dccpclo		
		dccplsi		
		dccplso		
dgr		dgr2file		
		dgrcli		
		dgrclo		
		file2dgr		
dtpc		dtpcadmin		
		dtpcclock		
		dtpcd		
		dtpcreceive		
		dtpcsend		
bpv7 - imc	y = included	libimcfw		

bpv6 - imc		imcadmin	
		imcadminep	
		imcfw	
tc - dtka		dtka	
		dtkaadmin	
bpv7 - dtn2		dtn2admin	
		dtn2adminep	
		dtn2fw	
bpv6 - dtn2		dtn2admin	
		dtn2adminep	
		dtn2fw	
dtpc			
ltp	y = included	ltpcli	

	y = included	ltpclo		
	y = included	ltpclock		
	y = included	ltpdeliv		
	y = included	ltpmeter		
	y = included	udplsi		
	y = included	udplso		
		ltpcounter		
		ltpdriver		
		ltpsecadmin		
		sdatest	LTP service data aggreggation test program	
mn		nm_agent		
		nm_mgr		
restart	y = included	ionrestart		
tc		tcaddmin		
		tcaboot		
		tcacompile		
		tcapublish		
		tcarecv		
		tcc		
		tccadmin		
manpages	y = included		Useful for development	
bench tests				

utilities	y = included	bprecvfile		
	y = included	bpsendfile		
	c = check	bprecvfile2	new utilities added to ION 4.1.2	
	y = included	bpsink		
	y = included	bpsource		
		bpcancel		
	y = included	bpchat		
	y = included	bpcounter		
		bpcp		
		bpcpd		
		bpcrash	A test support program that simply forces a transaction crash, to trigger restart.	
	y = included	bpdriver		
	y = included	bpecho		
	y = included	bping		
	y = included	bplist	bplist is a utility program that reports on bundles that currently reside in the local node, as identified by entries in the local bundle agent's "timeline" list.	
		bpnmtest	bpnmtest simply prints to stdout messages containing the current values of all BP network management tallies, then terminates.	
	y = included	bpstats	bpstats simply logs messages containing the current values of all BP processing statistics accumulators, then terminates.	
		bpstats2	bpstats2 creates bundles containing the current values of all BP processing statistics accumulators.	