

Node	Service	From src	port (tcp)	To dest	port (tcp)	comment	ChangeLog
all							20th July '04 RLS: Add Oracle LRC/RMC, remove 91xx ranges SE: Include castorgrid.cern.ch in SE comment
atp	atp servers		123udp	localhost	123udp		21st July Add CVS URL and some formatting
BDII							23rd July SE: Modify castorgrid port range
	LDAP	*{RB,UL,WN}	*	localhost	2170		29th July Add MON and GridICE
		localhost	*	*{BDII}	2170		2nd Aug Fix CE 2199 to 2119
		localhost	*	*{CE,SE}	2135		9th Aug Add experiment WN connection table
							10th Aug Add LHCb target hostlist
CE							
	Globus & EDG Gatekeepers (GRAM)	*{RB}	C	localhost	2119		
	JobManager	*{RB}	C	*{RB}	C		
	GridFTP Control	*{UL,SE,CE,WN}	C	localhost	2811		
	GridFTP data (single channel)	*{UL,SE,CE,WN}	C	localhost	C		
	GridFTP data (multiple channel)	*{UL,SE,CE,WN}	C	localhost	C	!! Direction of connection is as for dataflow	
		localhost	C	*{UL,SE,CE,WN}	C	!! Direction of connection is as for dataflow	
RB							
	Logging & Bookkeeping	*{UI}	C	localhost	9000,9001		
	locallogger (logd)	*{CE}	*	localhost	9002		
	CondorG	*{CE}	*	localhost	7771		
	Network Server (GRAM)	*{UI}	C	localhost	7772		
	MySQL	localhost	*	localhost	3306		
	Modified GridFTP (see CE)						
PX							
	MyProxy	*{RB,UI}	*	localhost	7512		
RLS							
	LRC (OracleAS)	*{RB,UL,WN}	*	localhost	8080	For LCG VO's at CERN	
	LRC (tomcat)	*{RB,UL,WN}	*	localhost	8080	For non-LCG VO's	
	RMC (OracleAS)	*{RB,UL,WN}	*	localhost	7777	For LCG VO's at CERN	
	RMC (tomcat)	*{RB,UL,WN}	*	localhost	8080	For non-LCG VO's	
	MySQL	localhost	*	localhost	3306	For non-LCG VO's	
SE							
	RFIO	site{WN}	*	localhost	3147		
	GridFTP (see CE and comment)					(C) at castorgrid.cern.ch is set to 20000-21000	
	SRM - httpd(apache)	*	*	localhost	80		
GRIS							
	MDS (LDAP)	*{BDII,RB,UL,SE,CE,WN}	*	localhost	2135		
VO							
	LDAP	*{RB,SE,CE}	*	localhost	389		
MON							Requirements depend on R-GMA configuration
	RGMA - http(tomcat)	localhost	*	localhost	8080	From producer or consumer	
		*{see comment}	*	localhost	8080	To Information Catalogue or other MON	
	RGMA	*{MON}	*	localhost	8088	From Information Catalogue or other MON	
		localhost	*	*{MON}	8088		
		localhost	*	*{MON}	8088		
GridICE							Collector node.
	Extended GRIS (LDAP)	*{GridICE server}	*	localhost	2136		
	GRIS (see also GRIS above)	*{GridICE server}	*	localhost	2135		Used to announce presence of EX GRIS service
	LEMON	site{RB,UL,SE,CE,WN,GridICE server}	*	localhost	12409 (udp & tcp)		
misc							
	NFS	site{SE,CE,WN}	*	localhost	2049	Requirement depends on site configuration	
	portmap	site{SE,CE,WN}	*	localhost	111 (udp & tcp)	Requirement depends on site configuration	
	openssh	site{CE,WN}	*	localhost	22	Requirement depends on site configuration	
		site{CE,WN}	*	localhost	22	Requirement depends on site configuration	
Key:							
C	Controlable Ephemeral range (e.g. 20000-25000). Note: In practice, although this port-range is locally configurable using the GLOBUS_TCP_PORT_RANGE environment variable, the values applying at a remote service cannot be predicted. Consequently reliable connection can only be established if all ports >1023 are left open for outbound connections.						

The table below describes the network connectivity outbound from the Worker Nodes (WN) required by LHC experiment software.

Experiment	Node	From src	port (tcp)	To dest	port (tcp)	Server service/Comment	
ALICE	WN	localhost	*	lxn1175.cern.ch	8084	Cluster Monitor (CM)	
				aliendb1.cern.ch	8080	DB Proxy (DB).	
				aliendb2.cern.ch	8083	(May see traffic only under error conditions. Not required)	
				lxn1175.cern.ch	8092	LCG Alien-SE	
						Note: aioid transport ports required 50000-51000 (outgoing only)	
				aliens3.cern.ch	8901	aioid:Scratch-SE	
				aliens7.cern.ch	8901	aioid:Castor-SE	
				gridftp01.cern.ch	8901	aioid:IO-Server	
				gridftp02.cern.ch	8901	aioid:IO-Server	
				gridftp03.cern.ch	8901	aioid:IO-Server	
ATLAS	WN	localhost	3306	atlasdbpro.cern.ch	3306	database. Both source port and target host may be locally set.	
CMS	WN	localhost	*	*	3796	BOSS/MySQL. Not mandatory but highly desirable.	
				*	*	8884(udp)	MonaLisa. Not mandatory but highly desirable.
							Outbound email from WN also desirable
LHCb	WN	localhost	*	(see note below)	5222	Jabber	
					8000	Accounting	
					8084	Bookkeeping	
					8120	Log Server	
					8881	Bookkeeping	
					8996	OutputSandbox	
					9090	JobReceiver	
					9096	InputSandboxServicePort	
					9168	Job Monitoring	
					9169	JobStateServer	
					9170	Matcher	
					9189	FileCatalog	
						Note: target hosts - {lxgate03,lbnts2,lbnts1,lbnts3,lxgate05}.cern.ch,lhcb.ecm.ub.es	