

Activity	Action	Initiator	Initiator Detail	Endpoint	Endpoint Detail	Port	Protocol	SELinux Type	Notes
Capsule Registration	Capsule Registration (content host)	Capsule	subscription-manager	Satellite Server	Apache (Katello)	443	https	http_port_t	Katello's Candlepin Proxy
	Capsule Registration (smart-proxy)	Capsule	Smart Proxy	Satellite Server	Apache (Foreman API)	443	https	http_port_t	
	Content Mirroring	Capsule	Apache (Pulp)	Satellite Server	Apache (Pulp)	443	https	http_port_t	
	Forward request to Satellite	Capsule	Reverse Proxy	Satellite Server	Apache (Katello)	443	https	amqp_port_t	Katello's Candlepin Proxy
	External Node Classification	Capsule	Puppet Master	Satellite Server	Apache (Foreman)	443	https	http_port_t	
	Run Report	Capsule	Puppet Master	Satellite Server	Apache (Foreman)	443	https	http_port_t	
	Template Retrieval (Capsule -> Satellite)	Capsule	Smart Proxy	Satellite Server	Apache (Foreman)	443	https	http_port_t	Templates proxy retrieves template over SSL from Foreman
	DNS records	Capsule	nsupdate	DNS server	bind	53	dns	dns_port_t	The capsule is usually on the same server as Bind (i.e localhost, no firewall changes)
	DHCP records	Capsule	omapi	DHCP server	ISC dhcp	7911	omapi	dhcpd_port_t	The capsule is usually on the same server as ISC (i.e localhost, no firewall changes)
	Realm records	Capsule	XMLRPC API	IdM Server	Apache	443	https	http_port_t	
Docker Content Download	Docker Content Download	Capsule	Pulp	Satellite Server	Pulp	5000	https	complex_main_port_t	
Power Management	BMC On/Off/Cycle/Status	Capsule	User initiated API/UI	Client	IPMI Device	623	UDP	IPMI	Server -> (https) -> Capsule -> (IPMI) -> Managed node
		Capsule	Smart Proxy	Discovered node	Image Proxy	8443	https	http_port_t	Capsule sends "reboot" command to the discovered host (HTTPS only)
	iPXE chained template retrieval (Capsule -> Satellite)	Capsule	Smart Proxy	Satellite Server	Apache (Foreman)	443	https	http_port_t	Proxy retrieves template over SSL from Foreman
goferd message bus	Forward message to dispatch router on Capsule	Capsule	Dispatch Router	Satellite Server	Dispatch Router (Hub)	5646	amqp	unconfined_service_t	When the Capsule qdrouterd service starts, it connects to TCP 5646 on the Satellite
	Send report to Satellite Server	Capsule	Smart Proxy	Satellite Server	Apache (Foreman)	443	https	http_port_t	Upload report to Satellite, process results and display in web ui
	Initiation	Client	subscription-manager	Satellite Server	Apache (Katello)	443	https	http_port_t	Candlepin Proxy
Telemetry Data Upload	Send data to Red Hat Portal	Client	Telemetry data uploader	Satellite Server	Apache (Katello)	443	https	http_port_t	Red Hat Access plugin runs a REST service for forwarding data to Red Hat
goferd message bus	Forward message to client	Client	Katello Agent	Capsule	Dispatch Router	5647	amqp	unconfined_service_t	When goferd starts on the client, it connects to TCP 5647 on the Capsule and stays open
Content Host Registration	Capsule CA RPM Installation	Client	yum	Capsule	Apache	80	http	http_port_t	Downloads the katello-ca-latest RPM for configuring RHSM + installation of CA certs
	Initiation	Client	subscription-manager	Capsule	Reverse Proxy	8443	https	http_port_t	
Puppet Run	Manifest Request	Client	Puppet agent	Capsule	Puppet Master	8140	https	puppet_port_t	
PXE Boot	DHCP	Client	BIOS/EFI	Capsule	DHCP	67	UDP	dhcpd_port_t	UDP Broadcast, 67 source & destination Capsule side (Client sends & receives on 68)
	PXE	Client	BIOS/EFI	Capsule	TFTP Server	69	UDP	tftp_port_t	
	Template Retrieval (Client -> Capsule)	Client	Anaconda	Capsule	Smart Proxy	8000	http	soundd_port_t	Client connects to proxy port HTTP 8000 to download templates for provisioning.
	Installation	Client	Anaconda / Yum	Capsule	Apache (Pulp)	80 / 443	https / http	http_port_t	
Package Installation	Yum Execution	Client	Yum	Capsule	Apache	443 / 80	https / http	http_port_t	
Bootdisk	Full host bootdisk generation	Satellite Server	Bootdisk generator	Capsule	Apache (Pulp)	443 / 80	https / http	http_port_t	Only happens for Full host bootdisk during generation (ISO file download)
	iPXE chained template retrieval (Client -> Capsule)	Client	iPXE firmware	Capsule	Smart Proxy	8000	http	soundd_port_t	iPXE firmware from bootdisk configures network and chainloads additional iPXE script
	Installation/Removal/Update	Client	Yum	Capsule	Apache (Pulp)	443 / 80	https / http	http_port_t	Full host image does not download kernel/image, only yum and rpm content.
Telemetry Data Upload	Send data to Red Hat Portal	Client	Telemetry data uploader	Capsule	Reverse Proxy	443	https	http_port_t	Reverse proxy forwards data to Red Hat Access plugin REST service on Satellite Server
OpenSCAP	Configure client	Client	Puppet agent	Capsule	Puppet Master	443	https	http_port_t	Puppet agent run to configure "foreman_scap_client" (install manually on client host)
	Send report to Capsule	Client	foreman_scap_client	Capsule	Smart Proxy	9090	https	websm_port_t	Send generated SCAP report to Capsule for processing
	Send report from Capsule to Satellite	Capsule	Smart Proxy	Satellite Server	Apache (Foreman API)	443	https	http_port_t	Send Processed SCAP report from Capsule to Satellite
	View SCAP report in HTML / XML format	Satellite Server	Foreman	Capsule	Smart Proxy	9090	https	http_port_t	View original SCAP report in HTML or XML format
Content Host Registration	Capsule CA RPM Installation	Client	yum	Satellite Server	Apache	80	http	http_port_t	Downloads the katello-ca-latest RPM for configuring RHSM + installation of CA certs
	Installation/Removal/Update	Client	Yum	Capsule	Apache	443 / 80	https / http	http_port_t	
Provisioning	Template Retrieval	Client	Anaconda	Satellite Server	Apache (Foreman)	80	http	http_port_t	Direct Host connects Satellite HTTP 80 to download templates for provisioning.
Bootdisk	iPXE chained template retrieval	Client	iPXE firmware	Satellite Server	Apache (Foreman)	80	http	http_port_t	iPXE firmware from bootdisk configures network and chainloads additional iPXE script
Package Installation	Yum Execution	Client	Yum	Satellite Server	Apache (Pulp)	443 / 80	https / http	http_port_t	
Discovery	Host discovery and provisioning	Discovered node	Discovery Image	Capsule	Smart Proxy	9090	https	websm_port_t	Discovery node reports in Satellite 6 and sends facts
Docker Content Download	Docker Content Download	Client	Pulp	Capsule	Pulp	5000	https	complex_main_port_t	
DHCP	ECHO to verify IP address is free	Client	ICMP	Satellite Server		7	tcp and udp		External DHCP on a Client to Satellite network, ICMP ECHO to verify IP address is free (Optional)
Activity	Action	Initiator	Initiator Detail	Endpoint	Endpoint Detail	Port	Protocol	SELinux type	Notes
	Capsule Feature Retrieval	Satellite Server	Apache (Foreman)	Capsule	Smart Proxy	9090	https	websm_port_t	
Content Promotion	Initiation	Satellite Server	Apache (Pulp)	Satellite Server	Apache (Pulp)	443	https	http_port_t	API call tells Pulp to do necessary things for promotion
Content Sync	Initiation	Satellite Server	Apache (Katello)	Satellite Server	Apache (Pulp)	443	https	http_port_t	API call tells Pulp to do necessary things for promotion
	Remote Yum Repository	Satellite Server	Apache (Pulp)	Remote Repository		80	http	http_port_t	Typically HTTP, but could be other protocols
	Red Hat CDN	Satellite Server	Apache (Pulp)	Red Hat	CDN	443	https	http_port_t	
Content Mirroring	Initiation	Satellite Server	Apache (Pulp)	Capsule	Apache (Pulp)	443	https	http_port_t	Happens after sync and promote
Provisioning	Smart Proxy API Req. to configure TFTP, DHCP, etc	Satellite Server	Apache (Foreman)	Capsule	Smart Proxy	9090	https	websm_port_t	Orchestration, configure Smart Proxy for provisioning, Requesting IP, TFTP PXE config.
		Satellite Server	Apache	Capsule	Smart Proxy	9090	https	websm_port_t	Satellite 6 sends "reboot" command to Capsule (to be proxied to the discovered host)
Remote Install	Initiation	Satellite Server	Apache (Katello)	Satellite Server	Apache (Pulp)	443	https	http_port_t	API call tells Pulp to begin consumer action
	Send install command to client	Satellite Server	Apache (Pulp)	Satellite Server	Qpid	5671	amqp	amqp_port_t	
	Forward message to dispatch router on Satellite	Satellite Server	Qpid	Satellite Server	Dispatch Router (Hub)	5671	amqp	amqp_port_t	Dispatch router is connected to Qpid on localhost
Telemetry Data Upload & Report	Send and read data to/from Red Hat Portal	Satellite Server	Red Hat Access plugin	<a href="http://cert-api.access.redhat.com">cert-api.access.redhat.com</a>	Telemetry service	8443	https	http_port_t	Isolated Host sends data for analysis and also retrieves analytics reports
Remote Install	Initiation	Satellite Server	Apache (Katello)	Satellite Server	Apache (Pulp)	443	https	http_port_t	
	Send install command to client	Satellite Server	Apache (Pulp)	Satellite Server	Qpid	5671	amqp	amqp_port_t	
	Forward message to dispatch router on Satellite	Satellite Server	Qpid	Satellite Server	Dispatch Router (Hub)	5671	amqp	amqp_port_t	Dispatch router is connected to Qpid on localhost
Compute Resources	Fog interactions (query/create/destroy/etc)	Satellite Server	Fog	Compute Resource	Openstack	5000	http	complex_main_port_t	
Compute Resources	Fog interactions (query/create/destroy/etc)	Satellite Server	Fog	Compute Resource	EC2	443	https	http_port_t	
Compute Resources	Fog interactions (query/create/destroy/etc)	Satellite Server	Fog	Compute Resource	oVirt	443	https	http_port_t	
Compute Resources	Fog interactions (query/create/destroy/etc)	Satellite Server	Fog	Compute Resource	Libvirt	22 / 16514	ssh / tls	ssh_port_t, virt_port_t	Either is common
Telemetry Data Upload & Report	Send and read data to/from Red Hat Portal	Satellite Server	Red Hat Access plugin	<a href="http://cert-api.access.redhat.com">cert-api.access.redhat.com</a>	Telemetry service	443	https	http_port_t	Direct Host sends data for analysis and also retrieves analytics reports
Orchestration	Validation of DNS conflicts	Satellite Server	Foreman	DNS server	bind	53	dns	dns_port_t	DNS service must be reachable by Satellite Server - see "query_local_nameservers" setting
Remote execution	Run Job on VM (ask Capsule to run it on VM)	Satellite Server	Foreman REX plugin	Capsule	with REX feature	9090	https	websm_port_t	Foreman -> API call as many others, same flow for load balancing queries and live updates
noVNC console	Launch noVNC console	Satellite Server	SSL/TLS	Target host		5900-5930	tcp		Optional Satellite originated communications, for noVNC console in web UI to hypervisors
LDAP	LDAP authentication	Satellite Server	LDAP, LDAPS			389, 636	tcp		Optional Satellite originated communications, for LDAP and secured LDAP authentication sources
Remote execution	Run Job on VM proxied through Capsule	Capsule	Capsule REX plugin	Target host		22	ssh	ssh_port_t	SSH connection uploading job script and executing it (reading the whole output of run)
Remote execution result upload	Upload output of job to Satellite	Capsule	Capsule REX plugin	Satellite Server		443	https	http_port_t	API call passing output to foreman-tasks plugin
Remote Execution	Run remote execution job	Capsule	Smart Proxy	Capsule	Smart proxy dynflow	8008	https	http_port_t	Internal comms, smart proxy to smart proxy dynflow core services (no firewall changes)