

ALPHAREN CORE-Integrator (ARINT) System

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System Landscape

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Basic components

Basic logical components of this system are:

- (ARCLST) Integrator Cluster subsystem
 - (ARSRV) Physical or virtual Server
 - · (ARLDB) High Availability assurance service
 - (ARWADM) Web admin console interface
 - (ARSCHED) Scheduler
 - (ARKVD) Key-Value Data store
 - (ARPuSuB) Publisher Subscriber Queues
 - (ARVPN) Integrator VPN access
- (ARDPX) Discovery Service, Distribution proxy (dynamic DNS)
- (ARMAIL) Integrator mail

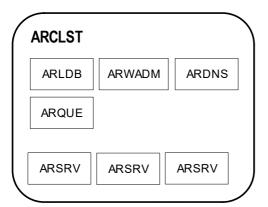
• (#TODO) Configuration portal #NOTE: not yet assigned code

System Blueprints

ARint blueprint

-#TODO a high level blueprint

ARCLST blueprint



- -#TODO start and make new descriptions (based on existing) for each component
- -#TODO from here continue review

ARCLST. Integrator Cluster

This component creates a local cluster formed by one or more **ARSRV** machines. Particularly can stand on one single machine with **ARSRV**.

This is not recommended because **ARCSLT** is a *network-bounded* system and **ARSRV** is a *cpu-bounded* one, and a *cluster to cluster* integration will have to suffer.

This component can run 1 per LAN machine.

ARSRV. Integrator Server

This is the core / heart of each machine. It will assure information getting, processing and sending or streing.

Other functionalities (in cooperation with **ARCLST**) cover scheduling, asynchronous processing and retrying in case of un-availability of an external system.

This component can run n per cluster.

ARLDB. Integrator High Availability assurance subsystem

This component assure:

- · load balancing,
- · failure detection,
- service availability,
- RTT ordering access to in case of multiple ARSRV modules.

All **ARSRV** components work *ACTIVE ACTIVE* inside any **ARCLST**. Of course, clusters work independently each of the others.

Also, each **ARLDB** keeps a dynamic trace of any **ARCLST** from the system, so a new cluster can be added without the need of any downtime.

This thing is also applicable inside a cluster where at any time, with any downtime, a new **ARSRV** can be added. If is right configured then will be automatically discovered and made part of cluster.

This component can run 1 per cluster.

ARWADM Web amin console

This will assure cluster administration, for all its servers and other components.

This component can run n per cluster. The reason for more ARWADM is to secure each of them.

ARDPX. Access and distribution proxy

This module is useful when an **ARCLST** is buit on **ARSRV**s physically implemented as a set of small virtual machines on a single server, having their LAN. Sure, ALPHA-REN hardware will assure that, but if you're using other hardware it will be needed.

Thiz module will stay in own LAN DMZ being directly exposed on ARCLST IP external access.

This module is responsible for:

- access the system outside its LAN without the need of a router with port forwarding.
- · assurance of all reverse proxy operations.
- access on the ARCLST and ARSRVs outside cluster LAN.

This component can run 1 per machine.

ARMAIL Integrator mail

This module is responsible for sending administrative and notification mails from ARCLST cluster.

This component can run 1 per machine.

ARVPN. Integrator VPN access

This module assure VPN access into the ARCLST cluster.

Deployment over multiple LAN environments

In an environment with multiple LANs, in deployment architecture and process should consider the following aspects:

- · every LAN should have at least its own ARSRV in order to communicate with other LANs
- an ARCLST can assure balancing and failure services inside LAN
- in order to assure balancing and failure services over LANs, each one must have its own **ARCLST** (wirh all other required components to assure corresponding services) which communicate with the others.
- a queue service is strictly required both to assure messages transport inside LAN, but also between LANs; for this reason cannot be used any queuing system but one with remote (over LANs) capabilities (aka named broker system)

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