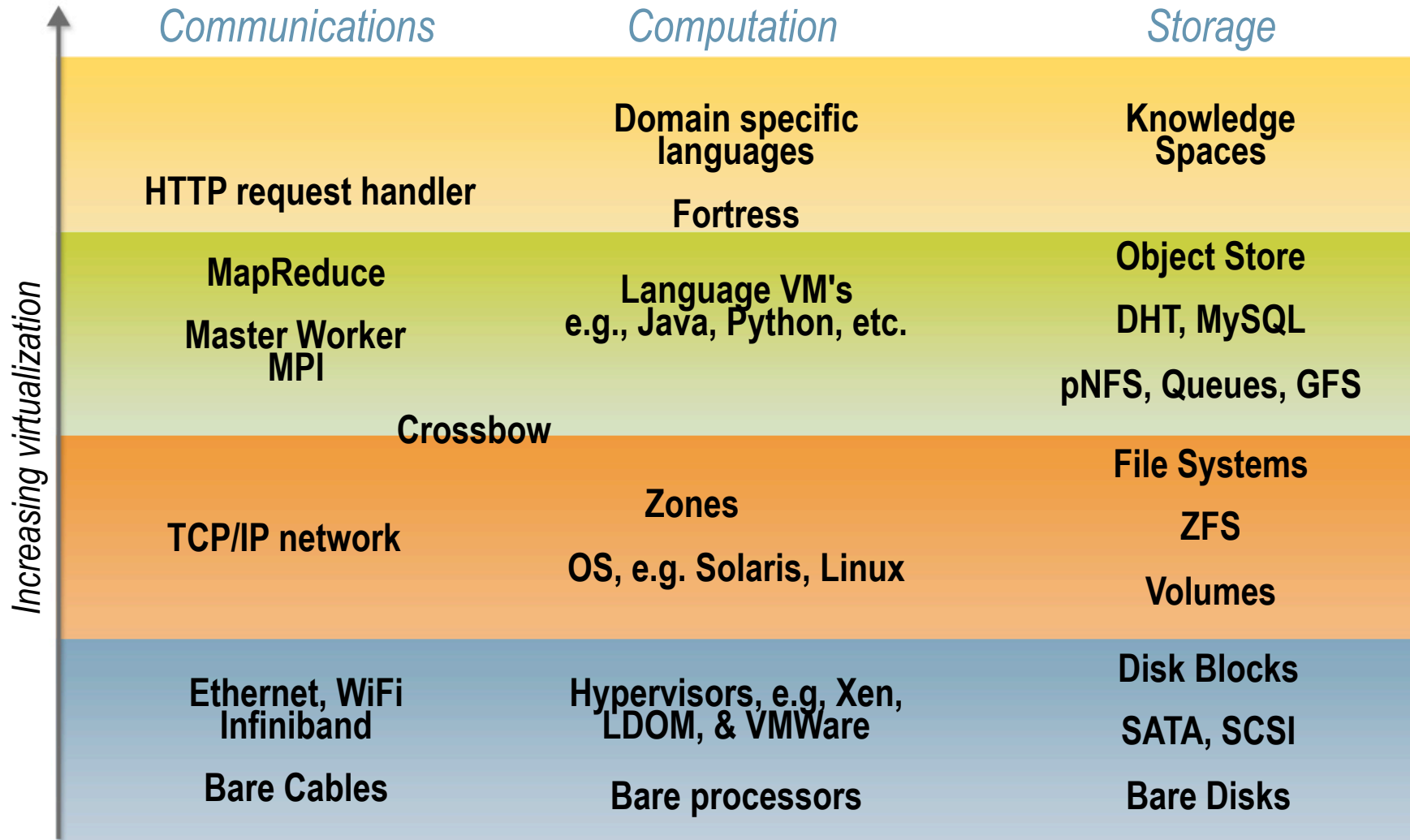


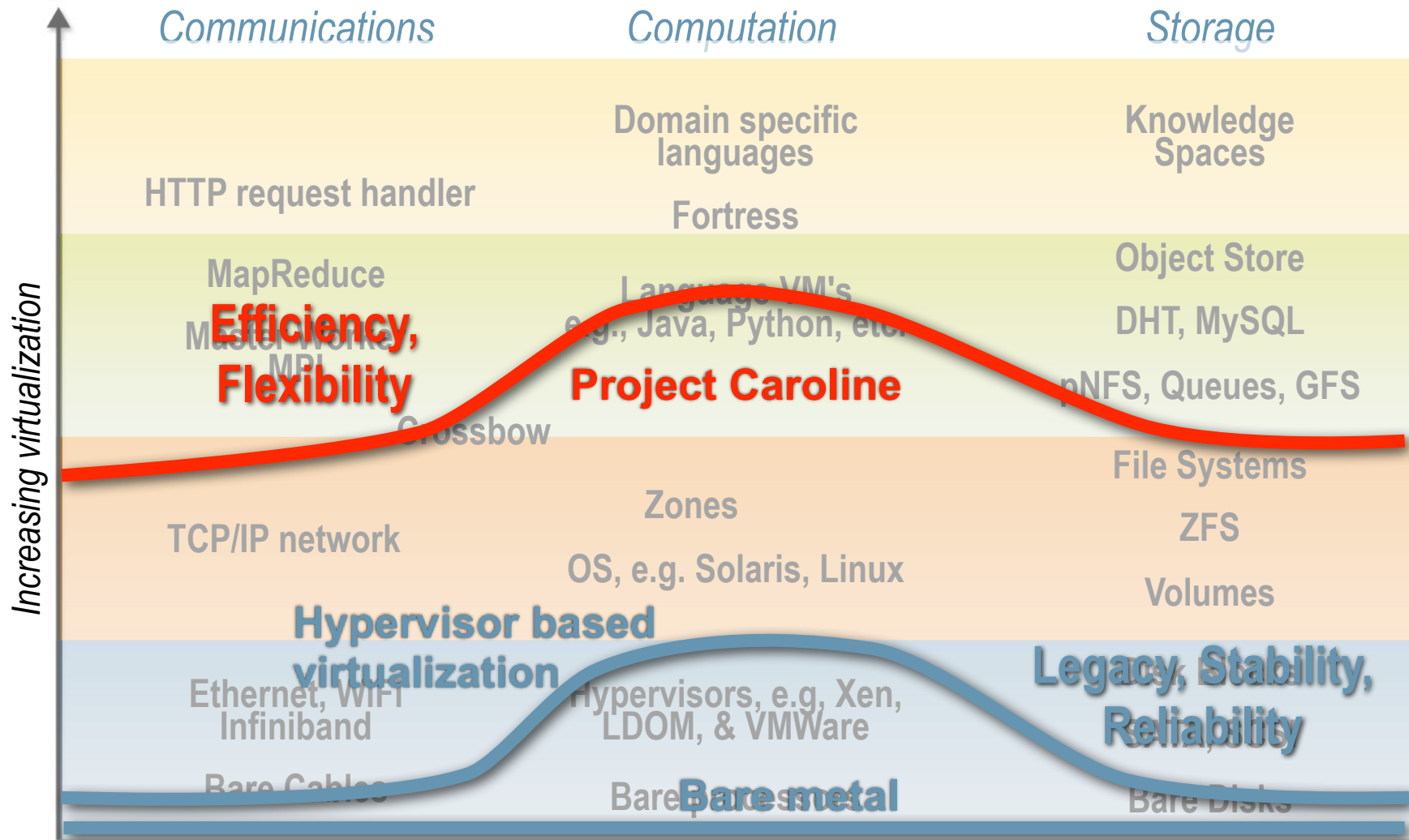
Project Caroline

- Hosting platform for development and delivery of dynamically scalable Internet-facing services
- Utility scale: lots of customers and services on a single large shared grid, with security and safety
- Full programmatic control of distributed compute, storage, and networking resources

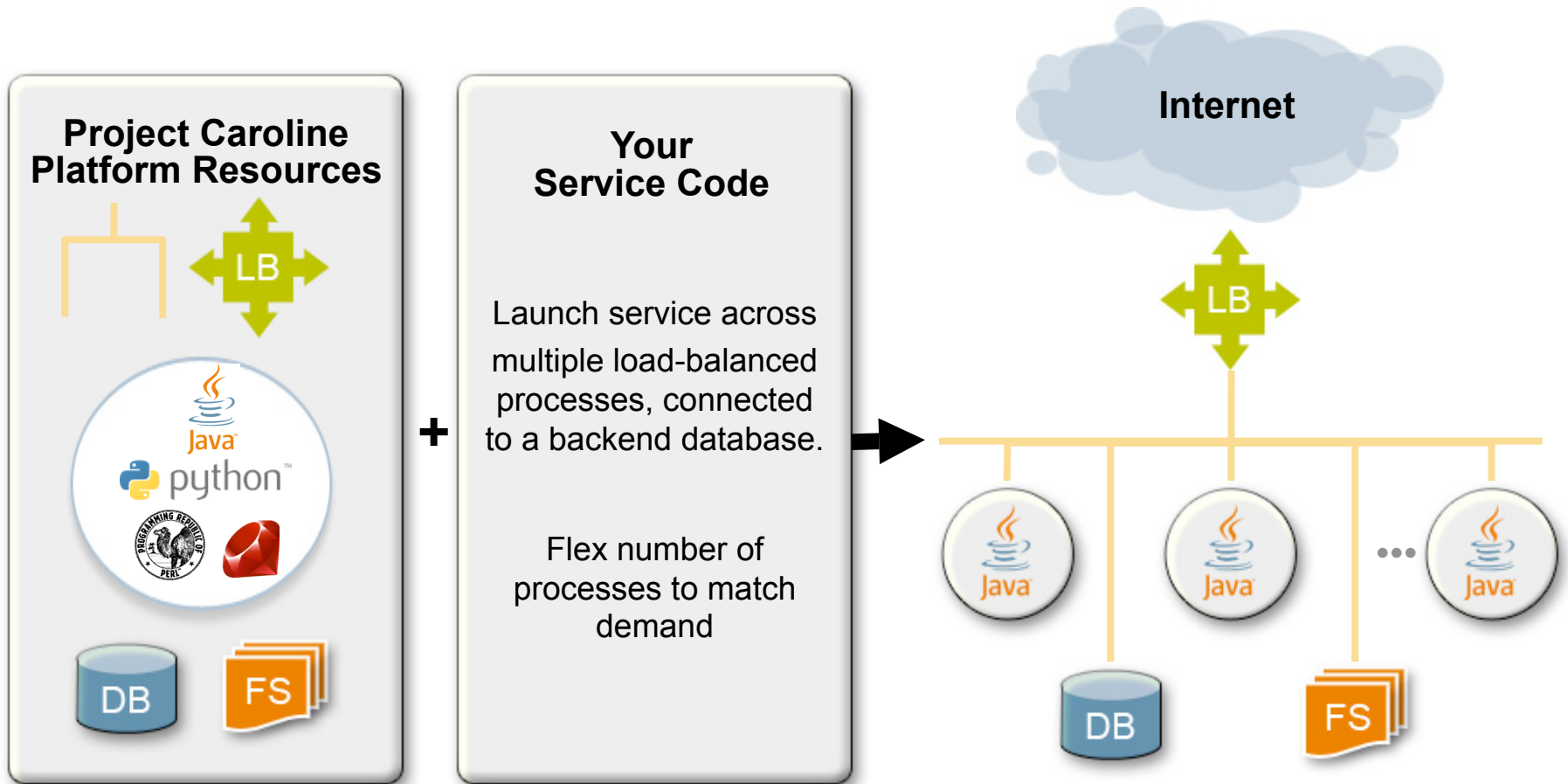
Virtualization Space



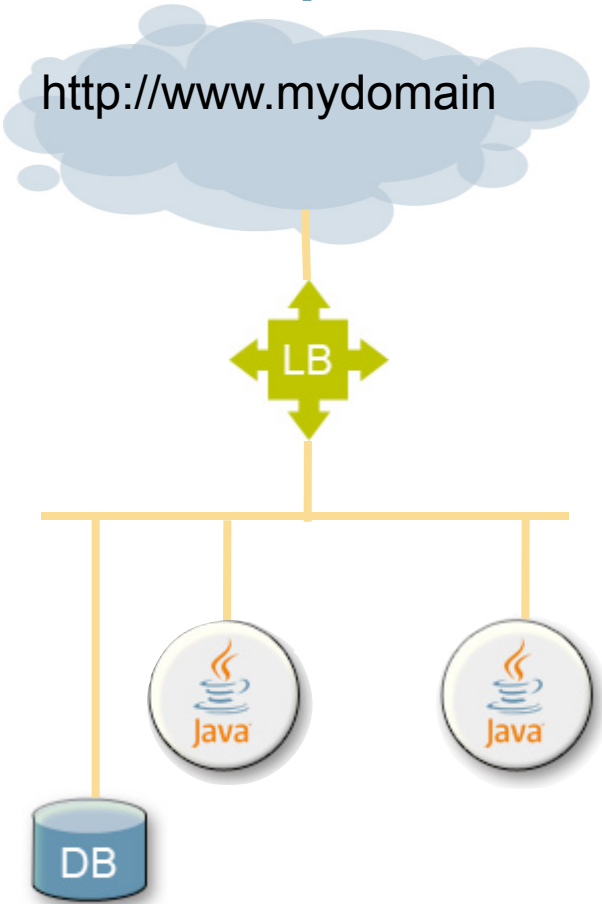
Data Center Virtualization Approaches



Caroline Developer View



Example



```

myNet = grid.createNetwork("myNet", 16,
    new CustomerNetworkConfiguration());
dbAddr = myNet.allocateAddress("dbAddr");
int1Addr = myNet.allocateAddress("intAddr");
int2Addr = myNet.allocateAddress("intAddr");
extAddr = grid.allocateExternalAddress("extAddr");
myDB = grid.createPostgreSQLDatabase("myDB",
    new PostgreSQLConfiguration(dbAddr.getUUID(), null));
pcfg1 = new ProcessConfiguration();
pcfg1.setRuntimeEnvironment(RuntimeEnvironment.JAVA);
pcfg1.setNetworkAddresses(Arrays.asList(intAddr.getUUID()));
...
myProc1 = grid.createProcessRegistration("myProc", pcfg1);
myProc1.start(false);
...
scfg = new L4VirtualServiceConfiguration();
scfg.setExternalNetworkAddress(extAddr.getUUID());
scfg.setRealServices(Arrays.asList(
    new RealService(int1Addr.getUUID(), 8080),
    new RealService(int2Addr.getUUID(), 8080)));
myLB = grid.createNetworkSetting("myLB", scfg);
bcfg = new HostNameBindingConfiguration();
bcfg.setHostName("www");
bcfg.setAddresses(Arrays.asList(extAddr.getUUID()));
myDNS = grid.getExternalHostNameZone().createBinding("myDNS", bcfg);

```

Project Caroline Status

- Public Evaluation (PE) grid went Internet live in March
 - > Get feedback on model
 - > Gain experience with grid operations
- Open source, all source code available under GPLv2 today
- www.projectcaroline.net is running on PE grid
 - > Drupal in PHP on Quercus on Apache Tomcat
 - > PostgreSQL, Apache James
 - > Apache Ant script: zero to web site in 6 minutes
- Sun Labs Project Aura blog recommendation service is running on PE grid