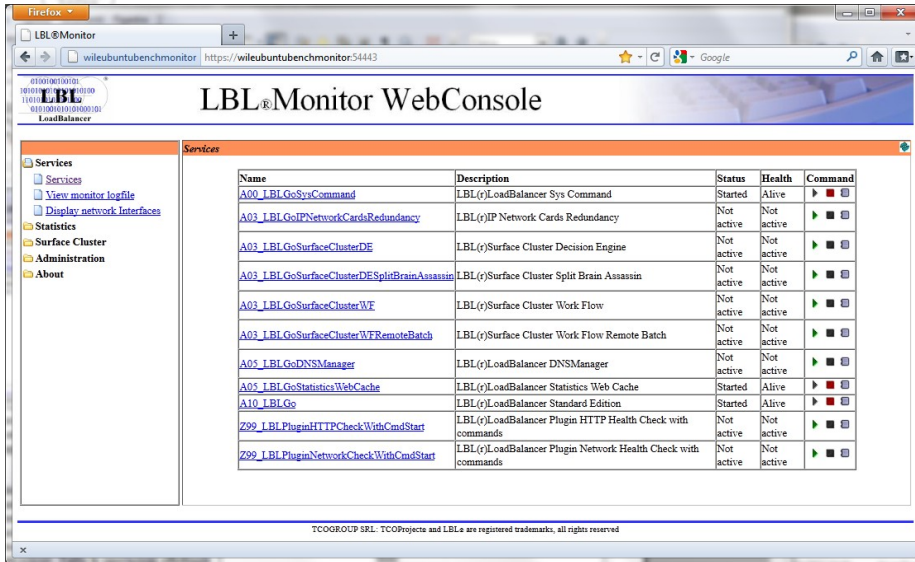
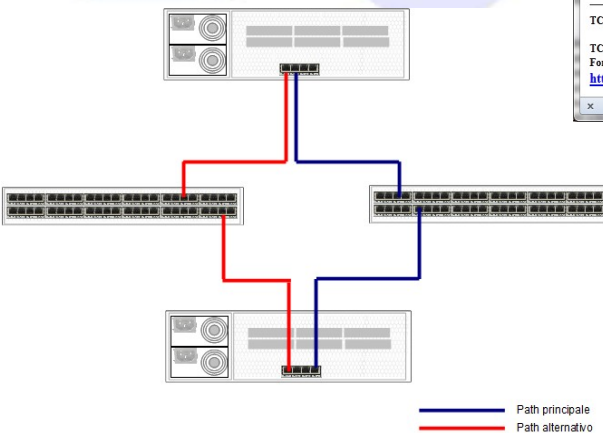
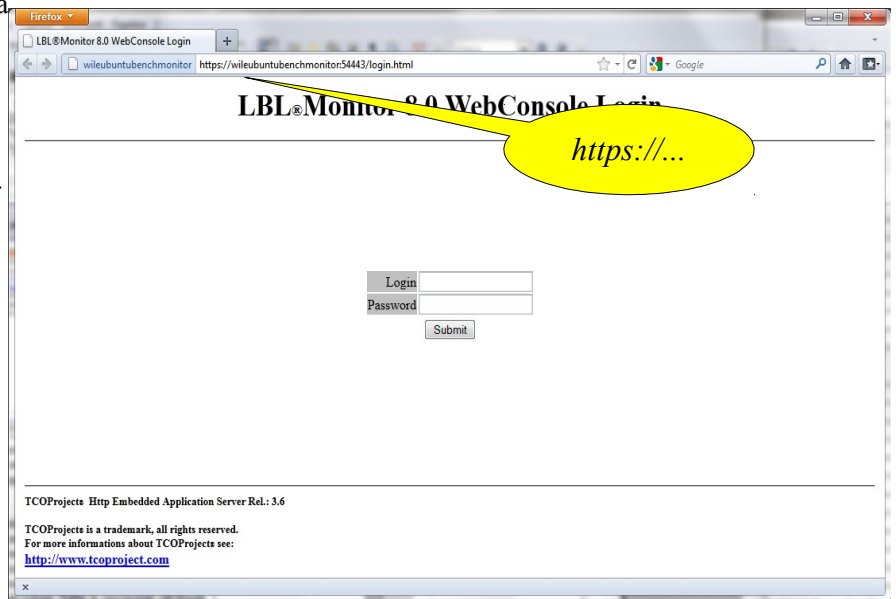


**LBL®Application Availability Infrastructure** is a suite of tools designed to increase the availability of application services. **LBL®Application Availability Infrastructure** comes from a long experience in many mission-critical projects that have helped to acquire the product the typical characteristics of simplicity and reliability of this area. **LBL®Application Availability Infrastructure** includes several products released in commercial distributions: **LBL®Monitor**, **LBL®LoadBalancer** Platform, **LBL®LoadBalancer** Standard HA, **LBL®LoadBalancer** Enterprise HA, **LBL®DNSManager**, **LBL®Surface Cluster** Work Flow & Decision Engine.



**LBL®Monitor** is a sophisticated Server Side services starter and controller. Through a web interface you can safely handle start and stop of processes, view logs and monitor network interfaces. The application profiles to be managed is described through a simple XML file that is parsed at run-time. The profile file is already designed to be easily moved from one operating system to another, contemplating any potential differences in parametrization. Throughout run-time, **LBL®Monitor** checks the life-cycle of each configured process by filtering messages obtained from their Standard Output and Error, and notifying administrators via e-mail or POST HTTP services.

Access to the Web Console is secured via HTTPS (SSL) connections and operator authentication. Console sessions expire if no transaction is made through it within a 5' time frame, thus requiring users to reauthenticate. All transactions through the Web Console are logged. **LBL®Monitor** features a Digest authentication password database, thus preventing unauthorized access by occasional personnel who incidentally peeked any content of the password file.



**LBL®Monitor** also features **LBL®IP Network Card Redundancy**. This service allows multiple network interfaces hardware to guarantee network connection availability. A number of physical network interfaces can be assigned to a single IP address, which is dynamically assigned according to network availability for the required route (path). The module is cross-platform (**AIX, Linux, Solaris, Windows**), guaranteeing uniform, intuitive and straight-forward treatment of such an important component in any mission-critical environment.

**LBL®Monitor** is the fundamental start-and-control tool at the heart of the **LBL®Application Availability Infrastructure** suite.

**LBL®Monitor** was developed to monitor mission-critical processes, therefore its main mission is undoubtedly to ensure that services are active. A key aspect is therefore to restart the monitored services upon occurrence of a failure event. With failure not only we mean both crash and restart events, but also events which suggest that the process itself is not stable or reliable from the **application-specific** point of view. Process management can be particularly appreciated when dealing with services working on top of Java application servers, being it able to capture events such as StackOverflow or OutOfMemory occurrences. By constantly filtering standard error and output streams looking after any potential problem,

**LBL®Monitor** can properly restore service states back to normal operating status. Here is a snippet of the file in which parameters are specified to describe actions to be taken against occurrence of certain message patterns or part of them.

```

<logDirFiles>lib/logs</logDirFiles>
</start>
<warningMessages>
  <message message="Hello world!" />
  <message message="Message out!" />
</warningMessages>
<errorMessages>
  <message message="Exception" />
</errorMessages>
<restartMessages>
  <message message="java.lang.OutOfMemoryError" />
  <message message="java.lang.StackOverflowError" />
</restartMessages>
</process>
</A05_MyProcess>
</processconf>

```

```

..
<notifications>
  <email enable="true"
    from="admin@mydomain.zed"
    fromLogin="admin@mydomain.zed"
    fromPassword="adminpwd"
    to="admin1@mydomain.zed"
    cc="admin2@mydomain.zed remotenotifications@mydomain.zed"
    bcc="admin@mydomain.zed"
    comment="This is an authomatic message, do not replay.">
    <property name="mail.smtp.auth" value="true"/>
    <property name="mail.transport.protocol" value="smtp"/>
    <property name="mail.smtp.host" value="services"/>
  </email>
  <http enable="true"
    postURL="http://services:8080/LBLNotificationCatcherExamplePost"
    comment="This is an authomatic message from LBL(tm)LoadBalancer.">
  </http>
</notifications>
...

```

Upon occurrences of any message specified in the **<warningMessages>** paragraph, only log entries will be triggered, while messages in the **<errorMessages>** paragraph will be notified by e-mail and / or HTTP POST (if enabled). Finally, for each message hit which was configured in the **<restartMessages>** paragraph, the process will be initially invited to gracefully shut down, and thereafter removed if still online and restarted right away. Even in this case administrators will be notified via e-mail and / or HTTP POST if enabled.

**LBL® IP Network Card Redundancy**, by reviewing network interface statuses and their associations with the respective addresses, ensures a comprehensive and straight-forward state monitoring of the node in terms of networking without any intervention on individual servers across the different consoles.

