



DFS Deutsche Flugsicherung GmbH
High Availability under Linux
for Air Traffic Safety in Germany

Safe running of up to 10.000 daily flights

DFS Deutsche Flugsicherung GmbH has been responsible for air traffic control in Germany since 1993. The main functions of this federal establishment are air traffic control together with the preparation and distribution of flight plans. Around 6,000 air-traffic controllers, engineers and technicians ensure the smooth and safe running of up to 10,000 flights daily in airspace which has one of the world's highest air traffic densities. Fulfilling such a critical task places the highest demands on both people and technology.

Aeronautical Information Service via fax and email

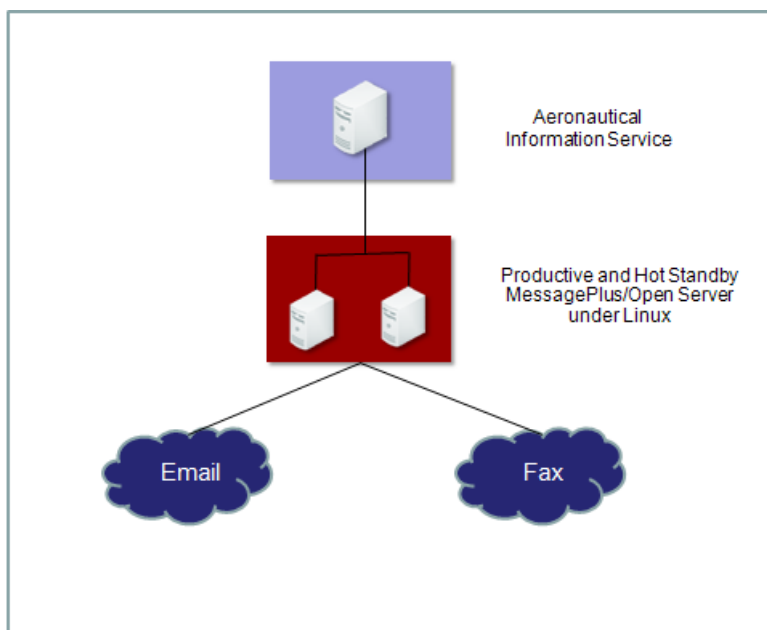
DFS GmbH provides two information systems, AIS (Aeronautical Information Services) and AAIS (Advanced Aeronautical Information Service), which guarantee the delivery of flight advisories. A large part of the information provided from these systems is distributed by fax and email: subscribers of the service automatically receive updated reports about flight areas, airports, route guidance, warning advisories etc. numerous times daily. In addition specific information can be requested online at any time and retrieved via fax.

“Fax & Email represent an important and proven medium in our information infrastructure and are widely used by customers” says Norbert Konle, manager Flight Data Processing at DFS GmbH.

Highest demands with respect to reliability, availability and dependability

As with all other technical systems at DFS GmbH, very high demands are placed on fax services with respect to reliability, availability and dependability in terms of document delivery. Any breakdown to the service must be avoided at all costs. The actual status of each document dispatched must be clearly shown immediately. In addition, detailed and complete archiving must be guaranteed so that DFS GmbH can track the dispatch of every fax months later if necessary. For fax retrieval, the constantly updated documents must be automatically delivered and any possible error needs to be immediately recognized, notified to the right location and actioned.

High availability setup of MessagePlus/Open integrated with Aeronautical Information Service



Integration into Unix infrastructure

In order to maintain and continue offering this high level of service, DFS engaged Pragmatic Solutions GmbH to evaluate the available technology, bearing in mind DFS's criteria for reliability and availability. Subsequently Pragmatic Solutions were commissioned to implement a robust high availability system. One condition was an absolute must: integration with the complete UNIX infrastructure of DFS GmbH.

Hot standby solution under Linux

"The only system which could meet DFS GmbH's requirements was MessagePlus/Open from INTERCOPE", says David Braun, Managing Director at Pragmatic Solutions. In particular, the support of UNIX operating systems such as Solaris, AIX and Linux facilitated DFS's requirement for implementing a high availability solution on a unix base. Subsequently it was decided to use two RedHat Linux servers operating in hot standby mode.

Implementation and additional tools by Pragmatic Solutions

"A crucial deciding factor was also the flexible integration options of MessagePlus/Open which enabled us to implement the complete solution for DFS within a short time and to develop customer specific tools" adds David Braun. Following some brief training, Pragmatic Solutions was able to independently carry out the installation and support the customer throughout the test phase right into production just a few weeks later.

Flawless continuous operation

Since the beginning of the production phase the system has operated flawlessly around the clock without any interruptions for several years. Closely linked and completely integrated with DFS's surveillance and information systems, the reporting flow is continuously, automatically controlled and monitored by the System Management (AIM/TAS) system.

A perfect solution

"AIS and AAIS provide pilots, airports and airlines with all the necessary information in a safe and timely manner. Not once has the system been down or faulty. In this system simply everything has been considered – it is a perfect solution. MessagePlus/Open makes a useful contribution to air traffic safety in Germany" concludes Norbert Konle.