Remote Responder℠:
A Systems Maintenance and Monitoring Solution

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LinuxForce's Remote Responder℠ is a systems management solution for companies with between one and fifty Debian GNU/Linux systems. Remote Responder℠ is a proactive, anticipatory, systems maintenance service provided through encrypted Internet connections from our staff's remote office locations. Remote Responder℠ is a high-level management tool; that is, it provides administration for the operating system and system software to help ensure on-going system health. Remote Responder℠ can augment your information technology staff and provide a basis for coordinating our technical support with your business initiatives.

Remote Responder℠ employs software developed by LinuxForce to enable us to provide maintenance and monitoring support for our client's systems in an efficient and effective manner. Once your systems are enrolled, Remote Responder℠ is available to your organization 24x7 through our Service Request Procedure. In addition, The Remote Responder℠ Service Request Procedure provides a convenient means for scheduling project-based initiatives.

1. Remote Responder℠: Service Significance

To ensure maximum uptime, you have to proactively monitor your systems around the clock to detect anomalies that could foreshadow problems. A well run shop has to do timely upgrades, anticipate potential failures, perform sundry proactive and reactive maintenance duties, and audit the environment to ensure policy and best practices are continually employed. Even the most perfectly engineered, most robust system can fall victim to a bug, a load spike, an intrusion, or a random manifestation of Murphy's Law. Every system needs its administrator to stay abreast of both local and industry-wide developments (since "change is normal" as Buckminster Fuller repeatedly reminded us).

Not every organization has the luxury of abundant IT (Information Technology) staff they can dedicate to these tasks. Those that do often prefer to have their IT professionals focusing on their unique areas of competitive advantage rather than utility services. That's why LinuxForce developed Remote Responder℠ to be an automated, comprehensive monitoring and systems administration service that can save you money, increase your efficiency, and most important, keep your systems humming along.

Remote Responder℠ Looks After Your Systems
So You Can Look After Your Business

For those who depend on your company's services, there's no tolerance for downtime; let LinuxForce's Remote Responder℠ look after your systems while you look after your business.

2.   Benefits of Remote Responder℠

- Remote Responder℠ provides continuous, comprehensive, 24x7, maintenance and monitoring systems administration services for your enrolled computer systems.

- Remote Responder℠ provides access to our skilled staff of experienced systems administrators, programmers, and Debian developers.

- Remote Responder℠ employs meticulous best practices for systems administration to ensure that your enrolled systems stay up-to-date, clean and self documenting.

- Remote Responder℠ implements a comprehensive Nagios- and Munin-based monitoring service so that problems are promptly discovered and can be quickly rectified.

- Remote Responder℠ automates routine processes to reduce costs and save clients money.

- Remote Responder℠ provides your company a technology partner that is familiar with your systems, people, and business requirements to help define project work for further development of your information systems.

3.   Professionalism

The following are the most important of our professional values which we are committed to employing in the service of your business objectives:

- In each of our client relationships, our highest value is earning and validating the trust of the client.

- We provide consistent, friendly, fair, professional, and courteous service to our customers.

- Our people are committed to being responsive to questions and requests.

- We honor Buckminster Fuller's credo that "It is not for me to change you. The question is, how can I be of service to you without diminishing your degrees of freedom?"

- We understand that each of our customers is unique and that your business requires a unique solution to best meet its business objectives within budget.

- We preserve security, privacy, and confidentiality for our clients.

- We are proactive, that is, we work to anticipate issues and concerns before they arise.

- Our services are reliable and dependable.

- You will have access to our skilled engineering staff.

- We recognize the significance of the Henri Poincaré quote that "There are no solved problems; there are only problems more or less solved." So we provide a post project review to assess lessons learned, identification of any needed remediation, identification of any needed projects to enhance services, and clarification of on-going support needs.

3.1. Security

Our clients trust us to understand their interests and goals and to perform accordingly. We value that trust. We will work to ensure that your data and business processes remain confidential, and that your resources remain secure and in your control.

Our policy is that we do not handle the client's data except where we must to effect the purposes for which we are retained. In cases where our duties require that we handle the client's data we do not keep copies of it, and we do not allow it to be shared with any person, or entity except as directed by the client.

We employ advanced technologies and best practices to make our access to client systems secure from interception by third parties. We provide our clients with methods of auditing the work we do on their systems. For example, we connect with client machines using encrypted connections such as the secure shell, "ssh". Also, we configure client machines to accept remote connections only from the addresses of the LinuxForce systems from which we connect.

4. Standard Services included with Remote Responder℠

These services are included in every Remote Responder℠ engagement:

Service-Level Monitoring In addition to checking your systems' services availability, our monitoring software provides statistical checkpoints on the performance of your network, systems and web applications. Monitoring is a key element for effective server maintenance. We maintain two Service Monitoring Systems at separate regional ISP collocation facilities to monitor client systems from different Internet perspectives. Our monitoring systems run 24x7x365 and include the following benefits:

- Review and analysis of anomalies in the system log files.
- Review of intrusion detection system logs.
- Check system parameters including disk space, memory, load average, and other resources.
- Check network availability and performance of services (e.g., SMTP, HTTP, FTP, etc.).
- Verification that enabled TCP services are running and that unused services are closed.
- Web statistics and response time monitoring.
- E-mail and/or pager alerts to notify key personnel of failed service tests.

Systems Maintenance Most of the maintenance on the Linux systems we administer is automated, but some maintenance functions require expert intervention. These maintenance procedures are always included:

- Installation of security upgrades.
- Application of relevant security bulletins.
- Investigation of reported anomalies.
- Analysis of system load issues.
- Upgrades to each major new release of the Debian GNU/Linux operating system.
- Break-fix support for system software and critical applications.

Professional Response Our clients have access to a professional staff that is familiar with the design, functionality, and characteristics of their managed systems.

LinuxForce provides 24x7 emergency response with a maximum two (2) hour response time when the emergency escalation procedure is employed.

Flexible annual maintenance agreements are available.

5.   Optional Services

In order to keep the fee structure for Remote Responder℠ affordable to clients with fewer requirements, the following features are optional or handled as project work:

- Automated rsync backups to your backups server

- Automated rsync backups to LinuxForce's off-site storage server

- Restoration of services after a hard disk crash*

- Harware failures that require on-site work*

- Any on-site technical work that the customer requests

- Expanded and customized e-mail reports and statistical summaries

- Monthly report on actions taken in support of your systems

- Documentation of our always-evolving best practices and procedures

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*We will work to preserve as much functionality as possible by emergency migration of services to alternative resources as part of our on-going service maintenance agreement. However, finishing the process of returning service to "normal" typically involves defining a project. Finally, we note that systems with RAID (Redundant Arrays of Independent Disks) are significantly more immune to disk failures and are recommended in situations in which high availability is required.

6.   Additional Services

As a trusted partner in maintaining your mission critical business system(s), we can employ our specific, ready knowledge of your systems to provide the following additional services:

- Security Audits

- Disaster Recovery Planning

- Systems Automation

- Web Site Development and Maintenance

- General auditing and analysis of systems

- Systems automation

- Reports, white papers, and documentation services

- FOSS (Free and Open Source) Software Solutions

- Custom Software Solutions

- General computer consulting services

7. Remote Responder℠: Case Study

Organization: CCIL (Chester County InterLink)

LinuxForce Service: Remote Responder℠ Systems Maintenance and Monitoring for a network of ISP (Internet Service Provider) servers.

Description: Chester County InterLink (CCIL) is a Community Oriented Non-Profit 501(c)(3) corporation. CCIL is an ISP uniquely positioned as one of the oldest non-profit agencies dedicated to helping the aged and disadvantaged members of the community in utilizing the Internet. CCIL's mission is to ensure that Chester County residents and organizations have easy and equitable electronic access to information while encouraging interaction among them as part of an electronic community.

Business Challenge: As a small non-profit corporation, CCIL is challenged to operate economically and deliver robust results in a cost effective and efficient manner. To those ends, CCIL needed to forge a partnership with an outsourced solutions provider such as LinuxForce to provide back-end systems management and maintenance so that CCIL could focus on its core competence providing Internet service to the citizens of Chester County without regard to their economic or life situation.

LinuxForce Solution: Since 2002, LinuxForce has performed back-end systems management and maintenance services on CCIL's Web servers which power their applications including email, personal home pages, community partner web pages and links. Additionally, LinuxForce's proactive monitoring services ensure stability, uptime and productivity for CCIL, their subscribers, and partners. LinuxForce's long experience in servicing institutional and commercial needs has enabled LinuxForce to train CCIL's technical volunteers in the latest issues concerning secure and efficient ISP operations. To help CCIL administer its ISP, LinuxForce also manages the back-end administration and authentication functions by creating a permissions based access application to adequately empower CCIL's volunteer and employee customer service administrators.

Results: CCIL is poised to celebrate its 10th anniversary as it continues to deliver its mission of ensuring that Chester County residents and organizations have easy and equitable electronic access to information while encouraging interaction among them as part of an electronic community. Additionally, CCIL is able to attain its financial operating budget thanks to LinuxForce's role as an outsourced solutions provider.

Notable Quotable: "LinuxForce has played a critical role in our ability to seize control of, and then manage, our nine servers. Prior to retaining LinuxForce, we were plagued by unresolved system failures and no definitive time-line for their repair. CCIL's pre-LinuxForce technology was driving the organization, rather than facilitating our service to the citizens of Chester County. We are 100% satisfied with LinuxForce's service, promptness, competence, affordability and the general professionalism by which they do business. Had we not been introduced to LinuxForce early in 2002, there is a strong possibility that CCIL would have closed down our operations due to mounting technology problems. The staff at LinuxForce has been great to work with!" — Mark Sammarone, President, Chester County InterLink

8. LinuxForce Company Overview

8.1. LinuxForce, Inc. Profile

LinuxForce℠ is a leading technology services provider specializing in the development, implementation, management and support of Linux-based systems, with a particular expertise in Debian GNU/Linux.

LinuxForce's leadership and track record of delivering positive business results since its founding in 1996 have made it the "go-to" firm for companies, government agencies, educational institutions and other organizations wanting to:

- migrate to Linux from Windows and other proprietary operating systems,

- migrate from commercial Linux distributions (such as Red Hat and SUSE) to the more stable, secure and flexible Debian,

- outsource the administration of their Linux-based systems, and

- support open source applications.

Current clients include: American Red Cross (Camden County Chapter), Chester County InterLink, Cyber Incident Detection and Data Analysis Center, The Franklin Institute Science Museum, 1-800-FLORALS Flowers Online, Aker Philadelphia Shipyard, and the University of the Arts.

"LinuxForce," and "Remote Responder" are servicemarks owned by LinuxForce, Inc.

8.2. LinuxForce Means Non-Stop Results

LinuxForce knows how to harness the power of Linux to design, implement, maintain and support systems that give you the confidence and edge to achieve and exceed your business goals. Systems that deliver increased productivity, savings, security and positive business results!

We do this by working with clients in a variety of ways from taking on discrete projects, to working shoulder to shoulder with in-house IT staff, to the complete outsourcing of IT services and support. This individualized approach allows clients to address their IT requirements efficiently and cost-effectively in support of their business strategies.

Regardless of the approach they choose, clients consistently find LinuxForce to be an invaluable and dependable partner, a partner that helps them achieve their maximum potential.

8.3. LinuxForce Capabilities

The LinuxForce team brings a wealth of experience and expertise to every client engagement. Our knowledge base spans multiple IT disciplines, programming languages and vendor tools, enabling us to create the most effective solutions using the most appropriate technologies.

Our dedication to delivering and maintaining reliable, robust, scalable and affordable Linux systems has generated a high level of confidence in both Linux and LinuxForce among a broad range of clients. Systems we've developed and maintain provide unrivaled reliability, flexibility and security. Clients know from experience that they can bet their businesses on the combination of Linux and LinuxForce.

Our capabilities and services include:

- Open Source Strategy and Planning
- Systems Administration, Maintenance, and Monitoring
- Remote Responder℠
- Systems Auditing
- Systems and Network Security
- Systems Analysis and Design
- Server Installation and Integration
- Systems Migration
- Web Design, Development and Hosting
- LAMP Web Application Development with Mason, Perl, and PHP
- Database Administration and Programming
- Custom Programming

8.4. Satisfied Customers: More Powerful Than Any Marketing Brochure

Linux customers are among the most demanding in the industry because of their unique technical backgrounds and orientations. Many of our clients are, like LinuxForce, pioneers in the deployment of mission-critical systems on Linux. That they have placed their faith in us to help them design, deploy and maintain their systems, says more about us than any marketing brochure ever could. We appreciate their confidence in our abilities and we are dedicated to ensuring that that confidence is enduringly reinforced.

We are proud to count these organizations both as clients and part of the LinuxForce family:

- Aker Philadelphia Shipyard
- AIG (American International Group)
- Atlantic Coast Yacht Sales, Inc.
- Chester County InterLink (CCIL)
- Center for Internet Security
- Cyber Incident Detection & Data Analysis Center (CIDDAC)
- The Constitutional Foundation
- Corel Corporation
- CrafTech Computer Solutions
- David's Bridal
- The Franklin Institute Science Museum
- Fraser-Volpe Corporation
- Greenfield Manufacturing Co. Inc.
- Independence Blue Cross
- Jacobs Management Group
- National Center on Adult Literacy
- Netlisters
- Philadelphia Sports Writer's Association (PSWA)
- Synergetics Collaborative (SNEC)