Data Sheet

PRIMERGY Management integrated Remote Management Controller – iRMC S2

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Extensive remote control with the integrated Remote Management Controller of the new PRIMERGY server generation (RX/TX 200/300 S4, RX600 S4, RX100S5 and TX150S6)

The iRMC S2 enables extensive control of PRIMERGY servers regardless of the system status – even in out-of-band operation. It integrates the remote management functionality with the basic system management functions on a chip on the motherboard.

The iRMC S2 is an autonomous system on the systems' motherboard. It has its own operating system, a Web server, user administration and alarm management and is also supplied with power when the server is in standby mode. Communication is carried out via a LAN connection, which can be shared with the system or used exclusively for management (TX200S3). The iRMC S2 forwards the signals from the keyboard, monitor and mouse (KVM) digitally over the network. Apart from the free standard functions, an iRMC S2 advanced pack can be purchased and enables graphical console redirection and the use of remote storage via USB.

The iRMC S2 gives administrators or service technicians access to the server and extensive control, even at decentralized locations. In the event of server problems, routine tasks and maintenance can be carried out efficiently. The iRMC S2 is based in the successful iRMC and provides enhanced functionality. With iRMC S2 the overall system performance can be monitored. Thereby operating system independent control of power consumption is possible. By means of the new Customer Self Service concept for certain server components you can do service on your own.

Hardware for remote management

Remote configuration and maintenance minimize time-consuming and cost-intensive call-outs.

The iRMC S2 permits system control, diagnosis, configuration and server restarting by remote access via the integrated Web interface – even if the operating system or hardware fails. Errors can be analyzed and often also rectified right away. The system administrator is notified by e-mail or SMS. The iRMC S2 offers access to remote storage resources (floppy disk, memory stick, CD/DVD, ISO image) via USB. Genuine headless system operation without a local mouse and keyboard is supported.

The iRMC S2 communicates directly via I^2C with the hardware sensors, such as fans, and not only performs remote management tasks, but also the functions of a Baseboard Management Controller (BMC). It is thus able to take over functions such as power management or reading the System Error and Event Log (SEL) regardless of the system status.

The iRMC S2 offers enhanced security functions, including 128-bit SSL encryption and efficient user authentication to ensure maximum security.

- Around-the-clock control, irrespective of the server status
- Efficient graphical console redirection (AVR)
- Remote storage via USB
- No expensive external KVM switches are required
- Avoidance of time-consuming and cost-intensive call-outs
- Customer Self Service concept for fast maintenance
- Monitoring and control power consumption

iRMC S2 – Technical data

VGA	Up to 1600 x 1200 and 16-bit colors or 1280 x 1024 and 24-bit colors or 1024x768 and 32-bit colors
USB	USB 1.1/USB 2.0
IPMI	IPMI 2.0

iRMC S2 – System requirements

Server	
Software	Windows 2000 Server & Advanced Server Windows Server 2003 Web Edition (32 bit) Windows Server 2003 R2 / Standard / Enterprise (32 bit and x64) Red Hat Enterprise Linux AS, ES, WS 3 Update 7 (x86) Red Hat Enterprise Linux AS, ES 4 Update 3 (x86 and EM64T) SuSE Linux Enterprise Server 9 SP3 (x86 and EM64T) Note: not all operating systems have been released for all the hardware
Hardware	RX/TX 200/300 S4, RX100S5, RX600 S4, TX150S6
Administrator system	
Software	Microsoft Internet Explorer Version 6.0 SP1 LINUX Mozilla Firefox Version 1.5
Hardware	Standard PC, LAN

Notes:

There may be import restrictions for some countries due to the 128-bit encryption.

Depending on the server or operating system used, certain management functions may differ or not be available.

Standard functions of the iRMC S2

Browser access

The iRMC S2 has its own Web server, which can be accessed from the management station with a standard Web browser. All sensor information, such as fan speeds, voltages, etc., and the complete configuration of the iRMC S2 are made available to administrators via the Web user interface.

Security (SSL, SSH)

Access to the Web server and the optional graphical console redirection, including the mouse and keyboard, can be protected by HTTPS/SSL (128-bit). Incorrect logins will be logged. To enable access to the iRMC S2 via the Remote Manager cryptographically secured communication can be established, which is protected by the SSH mechanisms. The Remote Manager is an alphanumerical user interface of the iRMC S2.

Operation Manager integration

The ServerView agents detect the iRMC S2 and automatically assign it to the server in question. Text console redirection via the Remote Management web user interface and the Web interface can be started directly from ServerView Operations Manager.

Power Management

Regardless of the system status, the following options for switching on/off the server from a remote workplace are provided:
– Via the iRMC S2 Web interface
– via the Remote Manager and the command line interface (CLI)
– per script

In this way, the server can be powered on, a power cycle can be initiated or the server can be gracefully shut down or shut down instantly (power button override), e.g. if the operating system no longer responds. In addition, an immediate or graceful reset (reboot) can be initiated.

Power Consumption Monitoring

To monitor system power consumption via the Web interface several reports are provided. You can choose between reports for a single day, for a month or a year.
Power Consumption Monitoring is not supported by all power supplies.

Power Consumption Control

Besides power monitoring also the operating system independent control is possible. The following operating states are selectable:
– Minimal Power Consumption. The CPU works always at lowest frequency and voltage
– Best Performance. Whole frequency and voltage bandwith is available and can be selected by the operating system.
– Schedule. Allows to switch between the above modesdependening on day of the week and time.
(These settings are CPU specific and are not available for all CPUs)

Text console redirection

A Telnet session can be initiated on the iRMC S2 via the Remote Management Web front-end. The Remote Manager is then called, by means of which text console redirection can be started, power management carried out, the error event log read or sensor information queried. Beside Telnet there is SOL (serial over LAN) and SSH (secure Shell) supported.

Headless system operation

A mouse, monitor and keyboard are not required on the managed server. As a result, costs are reduced, cabling in the rack is simplified considerably and security is increased.

Identification LED

The Identification LED can be switched on from the iRMC S2 Web interface to identify the system, for example in a fully configured rack.

LAN

In all systems the LAN interface of the built-in NIC (network interface card) is reserved for the management LAN. In other systems the LAN interface can be configured optionally for
– exclusive use by the management LAN
– shared operation with the system
– exclusive use by the system.
The management LAN interface of the system NIC is indicated by the screwdriver icon.

Command line interface (CLI)

The iRMC S2 not only supports the Remote Manager, but also the SMASH CLP (System Management Architecture for Server Hardware Command Line Protocol) standardized by the DMTF (Distributed Management Task Force).

Simple configuration – interactive or scripted

The following tools are available to configure the iRMC S2:
– iRMC S2 Web interface
– WinSCU
– Server management tool IPMIVIEW
– BIOS Setup
Scripted configuration via WinSCU or IPMIVIEW is also possible. In this way, the iRMC S2 can also be configured during initial setup of the server with ServerStart. Scripting is also possible to configure a large number of servers simultaneously.

Local user management

The iRMC S2 has its own user management system, in which up to 16 users with passwords can be created and granted different rights, depending on the group to which they belong.

User management via directory service

The protocol used is LDAP (Lightweight Directory Access Protocol) or secure LDAP. The directory services Active Directory, openLDAP and eDirectory are supported. Therewith users can be managed centrally and have not to be managed via the iRMC S2.

DNS / DHCP

The iRMC S2 supports automatic network configuration. It has a default name and DHCP (Dynamic Host Configuration Protocol) is enabled so that iRMC S2 obtains its IP address from the DHCP server. The iRMC S2 name is registered with the Domain Name Service (DNS). Up to 5 DNS servers are supported. If no DNS/DHCP is available, static IP addresses are supported.

Online firmware update

The iRMC S2's firmware can be updated online since there are two independent images of the firmware on the motherboard. If an error occurs during flashing, the redundant module can always be used as a backup.

Power supply

Power is provided from the system's standby supply.

Alarm management

The iRMC S2's alarm management system offers the following possibilities for alarm forwarding (alerting):
– Platform Event Traps (PETs) are sent via SNMP
– Direct notification by e-mail
– A modem can be connected to the serial interface for sending alerts (e.g. by SMS to a mobile phone).
In addition, the iRMC S2 supplies the ServerView agents with all relevant information.

Reading and editing the System Error and Event Log (SEL)

The contents of the System Error and Event Log (SEL) can be viewed and deleted
– via the iRMC S2 Web interface or
– via the Telnet-based interface (Remote Manager) of the iRMC S2.
– the SEL can be stored locally via the Web interface

Customer Self Service

Not all components of a server have to be replaced by Service. There are components you can replace on your own. These components are marked in the iRMC S2 web interface. This information is provided in ServerView Operations Manager too. In addition here a link is provided easing the purchasing of new component.

Memory Prefailure Analyse

The iRMC S2 takes care of memory prefailure analysis.

Optional components

The following components provide information on the system state directly at the server. Please note that these additional components are not available for all servers.

Further the usage is depending on the servers extension.

ServerView Local Service Display (LSD)

The LSD is a LC-Display with 2x20 charaters and a four way navigation key. Among others error messages, CSS information or system information can be retrieved via several information pages.

ServerView Local Service Panel (LSP)

The LSP is a display providing information on component states. In addition via LEDs information is provided which components (CRU - Customer Replaceable Units) you can replace in the respective system on your own. The LSP is a display can be build into systems front.

Enhanced functions of the iRMC S2 Advanced Pack

In addition to its standard functionality, the iRMC S2 additionally provides the functions Advanced Video Redirection and Remote Storage.
The enhanced functionality is enabled by means of a release key that can be ordered with the system (S26361-F1790-E241) or subsequently (S26361-F1790-L241) and loaded via the Web interface.

Advanced Video Redirection (AVR)

The iRMC S2 supports Advanced Video Redirection with the following benefits:
■ This is operated from a standard Web browser; no additional software except Java Runtime Environment must be installed on the management station.
■ System-independent graphics and text console redirection, including the keyboard and mouse
■ Remote access to permit boot monitoring, BIOS administration and interaction with the operating system
■ AVR offers up to 2 simultaneous "virtual connections" for working on a server from a different location. In addition, AVR minimizes the network load by means of hardware and video compression.

Remote Storage

Remote Storage provides the managed server with a "virtual drive" that is physically located at the remote workstation, i.e. at a different location in the network. The "virtual drives" provided by Remote Storage are as easy to use as local drives and offer the following options:
– Reading/writing of data
– Booting from Remote Storage
– Installation of drivers or small applications
– Remote BIOS update (BIOS update via USB)
Remote Storage permits simultaneous connection of up to two "virtual" drives and supports the following types of device:
– Floppy disk
– CD-ROM / DVD-ROM
– USB memory device (e.g. Memory Stick)
– ISO image