

# Product Insights

## Red Hat Enterprise Linux for High Performance Computing

Fujitsu is offering Red Hat Enterprise Linux for High Performance Computing with PRIMERGY Servers.

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## HPC Licensing Model

High Performance Computing (HPC) configurations comprise one or two head nodes (or master nodes) and a variable number of compute nodes. The head node, which may be configured with a secondary head node for highly available configurations, is used to deploy, monitor and manage the compute nodes of the HPC cluster. In particular the head node contains the scheduling software used to run high performance application codes across the compute nodes of the cluster.

Concerning the HPC product structure, Fujitsu has made efforts to reduce the complexity for our customers when ordering and registering HPC products and support subscriptions.

Due to the combination of operating system, HPC software stack and the associated support, an HPC configuration will require at least six (6) products to be used for the regular licensing of the cluster.

These are:

- (1) For each head node of an HPC configuration an appropriate standard Red Hat Enterprise Linux (RHEL) OEM Subscription is needed.
- (2) The head node needs the related RHEL Service Pack to be used. RHEL subscriptions and services are described in the Product Facts "Red Hat Enterprise Linux for PRIMERGY Servers – Fujitsu full Support"
- (3) **Each compute node requires the Red Hat Enterprise Linux for High Performance Computing basic support subscription. This is described in this Product Facts sheet.**
- (4) A cluster requires the Platform Cluster Manager Fujitsu Basic or Enterprise Edition subscriptions (based on a price per node).
- (5) Each HPC configuration requires one (1) Platform Cluster Manager Fujitsu Edition Services entitlement subscription and
- (6) one (1) appropriate HPC Service Pack.

The **highlighted** subscriptions are described in this Product Facts paper.

Important Note:

**All HPC subscriptions are logically coupled to the HPC head node server(s) and consequently have to be configured for these server(s).**

# HPC head node Subscriptions

Regarding the Operating System the head node(s) of a HPC cluster has/have to be licensed like a stand-alone server, i.e. with the appropriate standard Red Hat Enterprise Linux subscription and the related Service Pack. If additional functions on the head node(s) are desired further appropriate Red Hat Enterprise Linux subscriptions may be necessary - see Red Hat Enterprise Linux Products Facts <http://docs.ts.fujitsu.com/dl.aspx?id=7157f212-2daf-4bbf-b294-70c0facd9823>.

# HPC compute node Subscription

The HPC compute nodes have to be licensed by the Red Hat Enterprise Linux for High Performance Computing (RHEL-HPC) self-support subscription, which can be purchased from Fujitsu as an OEM product in a socket-based Subscription model. The temporarily limited (1 and 3 year(s)) Subscriptions can be used for all versions of Red Hat Enterprise Linux on all PRIMERGY models which are released for it and at the same prices. These Subscriptions authorize the downloading and deployment of patches and service packs up to and including the new versions that Red Hat makes available for Red Hat Enterprise Linux. With the purchase of a RHEL-HPC Subscription customer receives a software key, which enables the necessary registration in the Red Hat portal for the ordered number of compute nodes.

# Terms & Conditions

According to the Red Hat OEM regulations following must be observed for the purchase of Subscriptions:

- (1) Generally all products described in this paper may only be used on released and certified Fujitsu hardware.
- (2) At least four (4) subscriptions have to be initially purchased for one HPC configuration, i.e. an HPC cluster consists of at least 1 head node plus 4 compute nodes
- (3) In case of hardware replacement Subscriptions may be transferred from the old to the new hardware.
- (4) For renewal of already existing, but expired Subscriptions same Subscriptions must be purchased and used.

By using Red Hat OEM Subscriptions and FTS services customer is accepting related terms and conditions:

- (1) **Red Hat Support Terms and Conditions** (Subscriptions) under <http://www.redhat.com/licenses/products/> and
- (2) **Fujitsu Support Terms and Conditions** – not applicable, since Red Hat is directly providing self-support to customer.

# Red Hat Enterprise Linux for High Performance Computing

Subscription Description	Order number
Red Hat Enterprise Linux HPC (1-2 sockets) Self-Support 1 year	S26361-F2346-C851
Red Hat Enterprise Linux HPC (1-2 sockets) Self-Support 3 years	S26361-F2346-C852

## Important Notes:

- Currently subscriptions for up to 2 sockets servers with one year and 3 years term have been introduced.
- The HPC head nodes have to be licensed with standard server Subscriptions S26361-F2346-S1nn.
- Further application related licensing may be necessary
- This Red Hat Enterprise Linux subscription is offered in the Fujitsu SystemArchitect under HPC Software.
- **The subscription has to be ordered with the first HPC head node although it is licensing all compute nodes of the HP cluster.**
- **Due to procedural reasons it cannot be purchased on stock e.g. for later renewal purpose.**
- **For renewal the same subscription has to be purchased shortly in front of its activation.**

# Registration of the Subscriptions and services

The keys required for registration in the Red Hat Network are supplied on the Subscription documents. These documents also contain a registration key and detailed information on how to register hardware in the Red Hat Linux subscriber portal: [www.redhat.com/now](http://www.redhat.com/now).

By registration customer gets access to the Red Hat Network and at the same time he is accepting Red Hat's terms and conditions <http://www.redhat.com/licenses/products/> for using the products.

## References

HPC information in Fujitsu partner net:

<https://partners.ts.fujitsu.com/com/products/servers/primergy/serverssub/hpc/>

Linux at Fujitsu:

<http://ts.fujitsu.com/Linux>

Linux in Fujitsu partner net:

<https://partners.ts.fujitsu.com/com/products/servers/primergy/opsys/linux/Pages/default.aspx>.

Red Hat Linux references:

[https://partners.ts.fujitsu.com/com/products/servers/primergy/opsys/linux/pages/rhel\\_references.aspx](https://partners.ts.fujitsu.com/com/products/servers/primergy/opsys/linux/pages/rhel_references.aspx).

Information on the hardware server platforms:

[http://ts.fujitsu.com/products/standard\\_servers](http://ts.fujitsu.com/products/standard_servers)

Please note the separate data sheets on hardware and Red Hat Enterprise Linux.

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