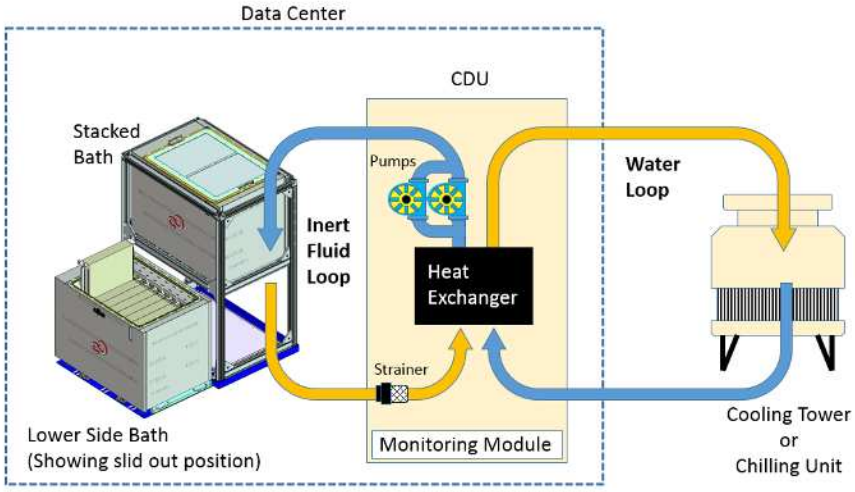
FUJITSU Datacenter Product
Liquid Immersion Cooling System

Direct liquid immersion technology paves the way for next generation of ultra-dense data centers. It's not air, it's not water – the future is Fujitsu Liquid Immersion Cooling System.

What is immersion cooling technology

Immersion cooling technology is a new paradigm to solve the challenges being associated with exponential data growth that is faced by next generation data centers. Immersing servers in a inert fluid provides greater cooling performance, eliminates the need for server fans, and reduces total cooling equipment power consumption.



The Fujitsu Liquid Immersion Cooling System

With long-established extensive expertise in liquid cooling technology, Fujitsu is gearing up to the next stage in immersion cooling system.
The bottom line of the system is closed-bath, single-phase immersion technology by which servers are directly submerged in a fluorocarbon-based inert fluid, Fluorinert™ (3M).

How It Works

The Fujitsu Liquid Immersion Cooling System consists of:
- the bath which has 16U horizontal rack space and can be stacked up by using a dedicated frame rack,
- the CDU (Coolant Distribution Unit) including a pump, a heat exchanger, strainer and a monitoring module of the system,
- the optional frame rack designed specifically for the immersion baths. The rack can stack two baths vertically, saving floor space needed.

The inert fluid captures the heat generated by submerged IT equipment and transfers it from the bath to the CDU through inert fluid loop. The heat exchanger within the CDU then exchanges the heat with water loop and expels it outside the data center via a cooling tower or a chilling unit depending on your choice.

Abnormal conditions are monitored by the monitoring module in the CDU and alerted via network.

Features and Benefits

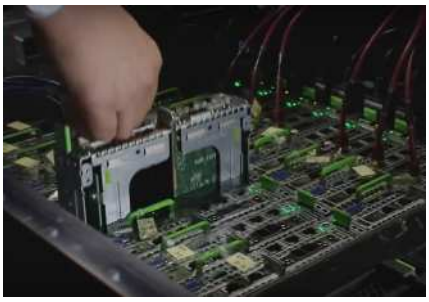
- **40% Less Power**
- **50% Space Savings**
- **Installable Anywhere**
- **Silent**
- **Easy to Maintain**

· Greater cooling performance leads to 40% reduction in power, 50% reduction in space compared with traditional air-cooling technology.

· The Fujitsu Liquid Immersion Cooling System allows you easy deployment of servers anywhere because the inert fluid protects servers from harsh environments such as high temperature, high humidity, arid and polluted air.

· Virtually silent operation due to the elimination of server fans.

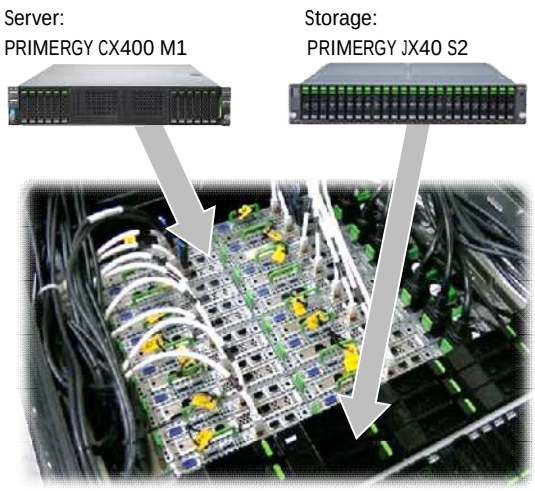
· Maintenance is as easy as common air-cooling systems. It does not require additional human resources.



- The bath has plenty of accessible cabling area for easy cable maintenance.
- No need to wear gloves or specialized protective gear during maintenance as the fluid is non-toxic.
- The need for refill maintenance is minimized by utilizing a sealed bath design.

· Concurrent maintenance is available.
- The cooling system stays "ON" during server maintenance
- Components, such as HDDs, are hot-swappable.

· The bath is compatible with 19-inch rack width specification. Any air-cooled rack-mountable servers which meet the depth requirements of the bath can be installed with a slight modification (removing fans, etc.) to realize the benefits of immersion cooling.



Single Bath

Eight Baths
with dedicated frame rack

Technical Details

Cooling Capability	30 kW/bath, 60 kW/rack
Bath / Rack Size	Bath W: 90 cm, D:72 cm, H:81 cm [W: 35″, D:28″, H:32″] Rack W:110 cm, D:78 cm, H:175 cm[W: 43″, D:31″, H:69″]
Bath Mass (incl. 8 x CX400 M1)	650 kg [1433lbs]
Coolant	Fluorinert™ (3M)
Control & Management	Temperature Sensors for Alerts, Auto shut down Control

More Information

To learn more about the Fujitsu Liquid Immersion Cooling System, please check out the following YouTube video: http://youtu.be/CaED6qXdn14
Should you have any inquiry about the Fujitsu Liquid Immersion Cooling System or would like to take a closer look, please contact Fujitsu at the following email address: fj-us-flic-team@dl.jp.fujitsu.com
The system will be showcased at Fujitsu Netherlands: http://www.fujitsu.com/nl/about/local/contact/index.html

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