

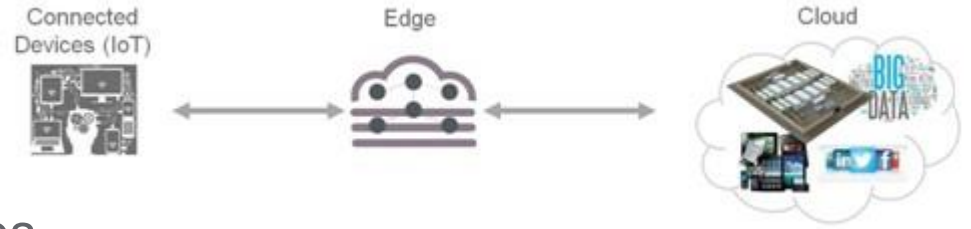


Cooling The Cloud

Schneider Offer Now and For the future

Presented by: Anne-Marie Gignac, Vice President Cooling Business

Overview



- Market Dynamics and Challenges
- Technologies and Solutions meeting today's challenges



Latest Market Dynamics

1 Reduce dependency on Mechanical Cooling

- > Optimized IT and water temperatures to minimize OPEX
- > Free-cooling / Economization arrangements to reduce compressor operation

2 Data Centers are getting Larger & Smaller

- > Shift to cloud and colo models
- > Edge computing putting IT close to the user to connect to cloud

3 Cooling sized for higher temperatures

- > Designs for optimum economization & extreme outdoor temperatures

4 Simplification of the installation

- > Modular and package approach simplify and accelerate site deployment and design

5 Environmental & Energy Regulations

- > More stringent and Broad Environmental Regulation toward Refrigerants
- > Increased regulation on minimum efficiency

Cooling Challenges

IOT Drives Data Everywhere

Edge ← → Cloud



Local
Data Center



Simplicity, Space,
and Speed

Regional
Data Center(Colo)



Managing costs, Speed, and
flexibility to serve a diverse
set of customers



Sustainable & maintainable
at large scale

Maintain reliability/resiliency

Schneider Offers Delivering Value in the IoT

Cooling solutions building on leading technology to cool the cloud

– Close Coupled Cooling

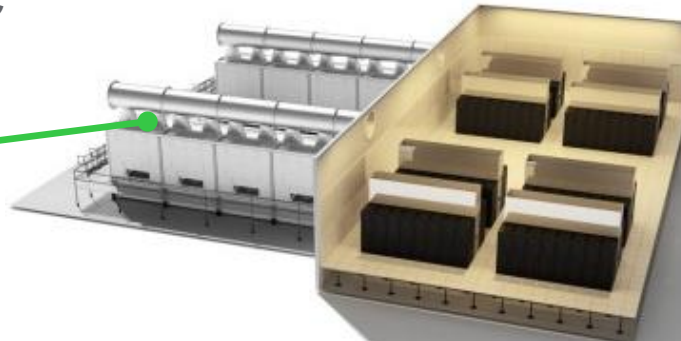
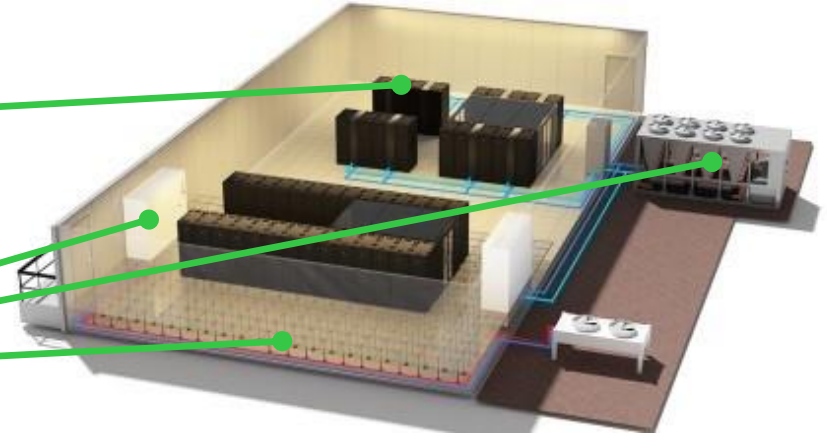
– Local DC & Small Regional DC

– Traditional Cooling

– Medium & Large Regional DC

– Air Economizer

– Hyperscale Cloud DC



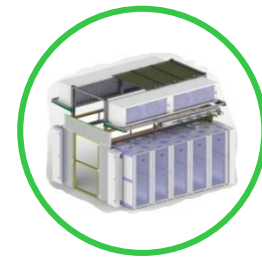
Close Coupled Cooling

InRow

- Modular & scalable at the rack and row level
- Targeted cooling for higher density areas
- Integrated easily into prefabricated rack, pod, or modules
- Standardized and Stock units for simple and quick deployment
- Optimized for efficiency over our closest competition
 - Highest efficiency and capacity for high water temperature operation
 - Best TCO available for DX thanks to newly designed variable speed compressor



Row



Overhead



Intelligent management to control temperature and optimize cooling efficiency at the rack or row level

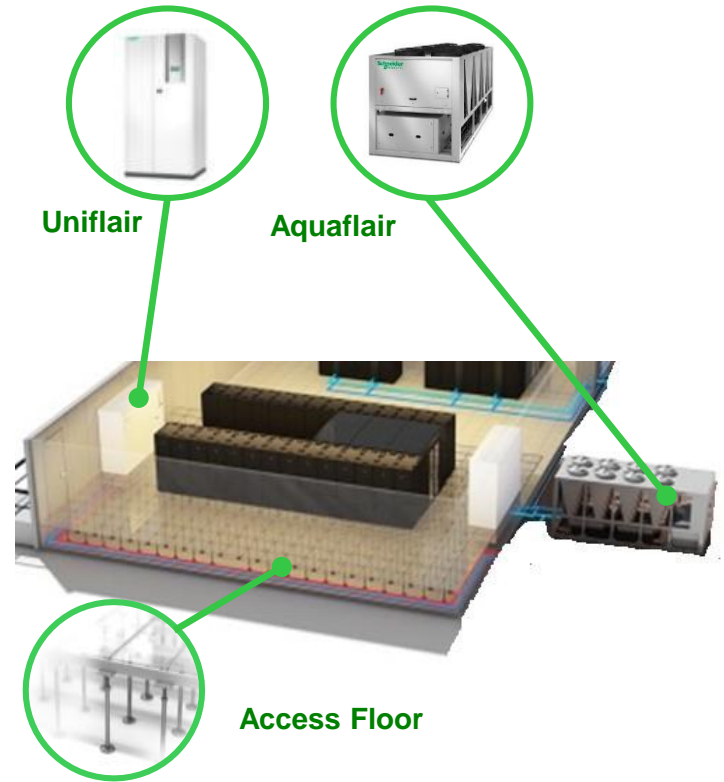
Traditional Cooling

Uniflair and Access Floor

- Delivering the highest capacity in the smallest footprint
- Flexibility of access floor for air distribution
- Optimized for high water temperature free cooling
- Provides optimal TCO for medium to large deployments

Aquaflair

- Integrated Free Cooling to simplify installation
- Flexibility to address a wide range of building types
- Match cost and efficiency based on site specific need

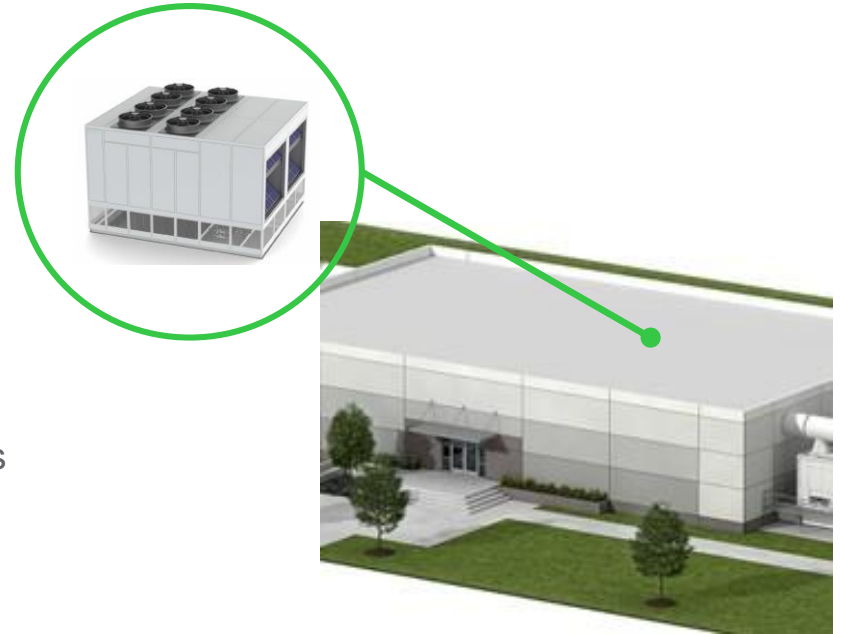


Intelligent management of the room and optimized management of the entire cooling system to balance capacity and system efficiency

Air Economizer

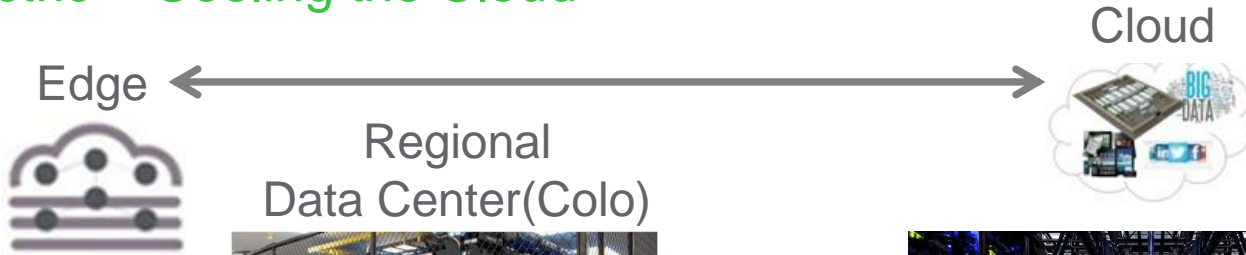
NEW Indirect Air Economizer

- Highest levels of efficiency in the Industry
- Advantages of air economization without the risk
- Reduces dependency on mechanical cooling
- Flexibility to address a wide range of applications



Intelligent management of the system to conserve energy, water to reduce or eliminate the need for mechanical cooling

Schneider Electric - Cooling the Cloud



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Data Center



Simplicity, Space,
and Speed



InRow

Overhead

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Managing costs, speed, and
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Uniflair

Aquaflair

Access Floor

Cloud



Sustainability & maintainability
at large scale



Air Economizer
Life Is On

Schneider
Electric

Life Is On

Schneider
Electric

Leading Technologies addressing today's challenges

Indirect Air Economizer



Highest Efficiency in most climates (Humidity)

Minimizes Risks

Simplification for large purpose built facilities

Reduce or Eliminate the need for Refrigerant

Water Economizer



Optimize efficiency and first cost

Low or no water usage

Flexibility to adapt to different building types

Limited Refrigerant Volume

Prefab Systems



Simplified Designs to reduce cost & increase speed of deployment

Optimize scalability to manage cash flow – pay as you grow

Optimize Available Space