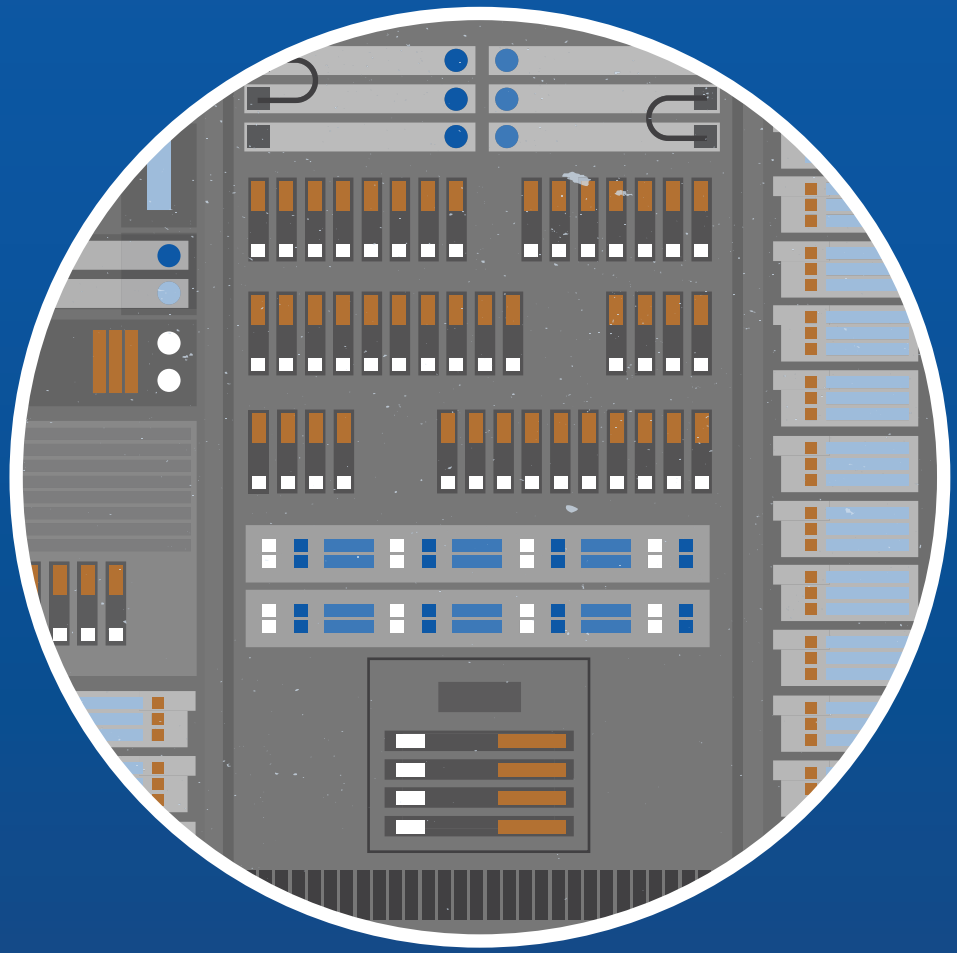
THE ULTIMATE GUIDE TO
DATA CENTER CLEANING



FIRST TECH

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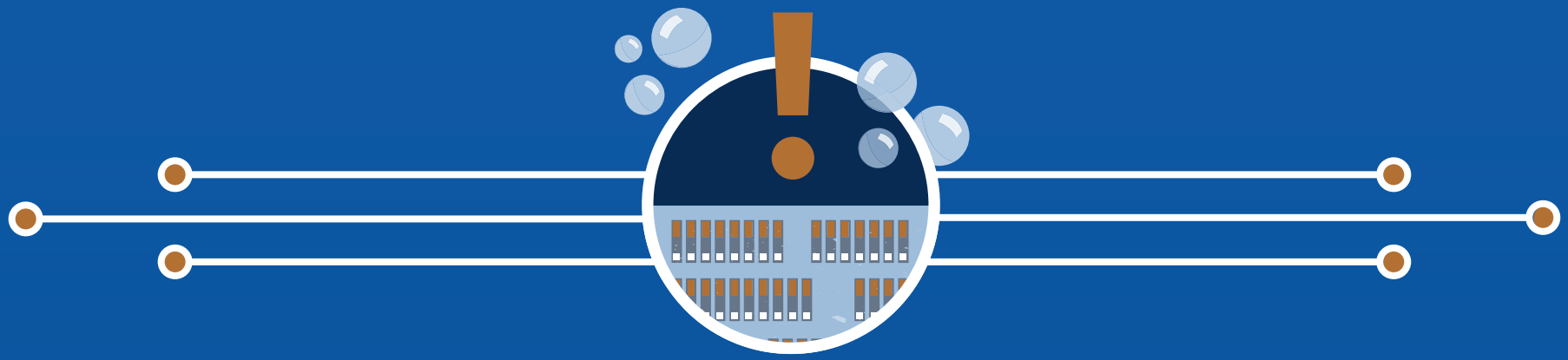
INTRODUCTION

Thanks to digital trends like Big Data and the Internet of Things, enterprises are applying advanced analytics to their products, operations and forecasts. All these advancements mean that the data center, as the brains and the heart of an organization's analytics efforts, is more important than ever.

The IT infrastructure is more sophisticated these days, but more sophisticated equipment requires more care. As companies demand more from their data centers, the price of unexpected downtime continues to rise. Businesses simply cannot afford problems in the computer room.

That's why professional data center cleaning is crucial to every enterprise. Environmental hazards like dust and dirt can damage equipment, leading to system failure and costly interruptions. A clean, well-maintained data center is a source of pride for any IT department.

WHY A CLEAN DATA CENTER IS IMPORTANT



Environmental factors cause a considerable chunk of hardware failures. When computer equipment is not properly cleaned and maintained, it leads to system failure. The cost of downtime is $9,000 per minute on average, according to a series of studies by the Ponemon Institute, and that number continues to rise. This is a price that most companies cannot afford.

Contaminants such as dust can get into machines and prevent them from working properly. Even microscopic pollutants can accumulate over time and lead to breakdowns. Pollutants can impede air conditioning systems, causing them to provide inadequate cooling and leading to overheated equipment.

Clean data centers that are protected from contamination see increased productivity, improved employee safety, more efficient energy use and a reduced rate of failure.

For a clean data center, you've got to monitor what comes in from the outside. That means protecting against contaminants.

CONTAMINATION SOURCES

Contaminants can take many forms. Some contaminants are inadvertently brought in by people who enter the critical environment. Others already exist, such as oxidation of the concrete sub slab, zinc whiskers and unpainted wallboard below the sub-floor. These contaminants are re-circulated by air handlers.

Without proper cleaning, pollutants can accumulate all over the computer room, even at a microscopic level. If left unchecked, these materials can cause sensitive equipment to break down, grinding your business to a halt.

ENVIRONMENTAL: Environmental pollutants are natural contaminants that can be introduced through people, or enter through open doors.

- **Pollen**
- **Spores**
- **Dirt and dust**
- **Mold**
- **Bacteria**

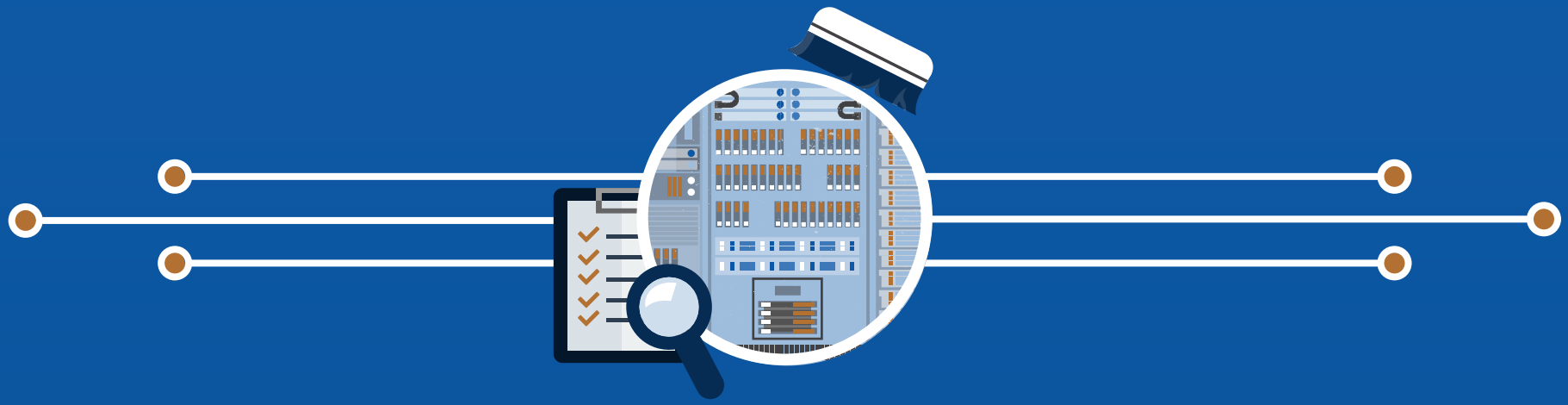
HUMAN: These are materials that fall off of people when they enter the data center.

- **Clothing fibers**
- **Dead skin and hair**

MECHANICAL: These materials come from mechanical equipment, often spread throughout the data center by the air handling system.

- **Joint compound dust and various contaminants from construction.**
- **Iron oxide dust from air handler belts and pulleys, also known as “black dust.”**

CRITICAL ENVIRONMENT CLEANING



Critical environments house your most sophisticated equipment, so why would you use anything but the most state-of-the-art cleaning process? These rooms require the utmost care and the most sophisticated cleaning services from trained professionals. Any contamination can affect productivity and safety.

It's important to entrust your critical environment cleaning with the most qualified technicians. When companies try to handle it themselves, it can often create more problems. Improper cleaning and poor techniques can lead to contamination, and without using the right tools and taking all the necessary precautions, you can actually do more harm than good.

POST-CONSTRUCTION CLEANING

Whether you're expanding your current business or moving into a brand-new facility, construction can leave behind contaminants that are harmful to your equipment. Dust and microscopic contaminants can remain long after the work is done and your team is all moved in.

It's important to protect and maintain the critical environment, eliminating any debris left over after construction. Before even setting up your equipment, you should work with a data center cleaner who can consult you on preventative maintenance.

Removing contaminants after construction requires assessing and cleaning the HVAC system, sub-floors, walls, ceilings and ducts. In addition to cleaning contaminants, the right data center cleaning firm can work with your contractors and coordinators to ensure proper post-construction care at the right level and the right time.

SAFETY

Data center cleaning is all about safety:

- **The safety of your equipment.**
- **The safety of your data.**
- **The safety of your employees.**
- **The safety of your business.**

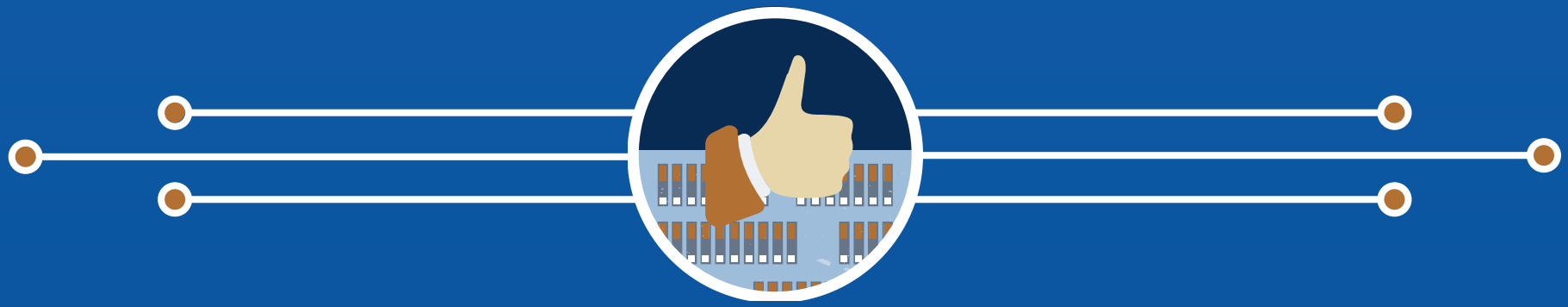
When your data center isn't properly cleaned, contamination can have a negative effect.

The airflow in your data center is recycled for maximum cooling. When this air fills with debris, not only does it affect the equipment, it can also affect your employees. Constantly breathing in contaminants is unhealthy, and an unhealthy environment breeds unhappy, less productive employees.

Another extreme safety issue to be aware of is the threat of fires. Between 2006 and 2010, 209 American fires started in electronic equipment rooms according to the National Fire Protection Association. These fires occur when pollutants cause equipment to overheat. Some debris, such as "black dust" from worn air handler belts has metallic qualities to it, making it conductive.

The threat of fires in the workspace makes data center cleaning a crucial part of site management.

BEST PRACTICES FOR A CLEANER DATA CENTER



Although it's highly advised you work with professionals, there are also a few things you can do right now that will make a difference.

- Establish a "clean zone" outside of the data center. This should be an area that is not high-traffic, which is cleaned every day. That will help to ensure employees are bringing less contaminants into the actual data center, by creating this buffer zone.
- When you get new computer equipment, don't unpack or uncrate it in the data center. The boxes themselves could carry contaminants. Unbox them outside of the data center and give the equipment a good cleaning before bringing it in.
- Place tacky mats at every data center entrance and remove contaminants from footwear before entering.

CONCLUSION

Your business depends on continuous uptime and dependable infrastructure. All of these require a clean, contaminant-free environment.

To make sure your site is clinically clean, bring in professional data center cleaning technicians to provide a comprehensive audit of your workspace and processes. The technicians will be able to advise you on areas that need improvement, and recommend a best business practice program for your critical environment.

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