Digitalizing Manufacturing Enterprises with Nutanix Cloud Solutions

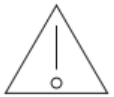
Agenda

1 Smart Manufacturing Trends

2 Industry 4.0 challenges on IT

3 Nutanix Solution for Smart Manufacturing

Impacts of Covid on Manufacturing

	 **Macroeconomic developments**	 **Worker Safety**	 **Regulatory developments**	 **Technology/Supply Chain vulnerabilities**
2020/21 – Crisis years	• Factories closed or run below capacity • Preserving capital due to market uncertainties	• Technology plays a key role in keeping manufacturing workers safe • Systems to support automation, robotics, social distancing, contact tracing etc.	• Government incentives to help manufacturing markets	• Disruption exposed weaknesses in technology and supply chain • Manufacturers behind on optimizing business with technology/digitalization exposed to losses
Post–Crisis years (2022/23)	• Factories functioning at pre-crisis levels • Manufacturing productivity that has been stagnant improves due to technologies put in place during pandemic	• Automation and robotics will stay post-covid as they supplement human labor and help with manufacturing productivity	• Policies to reduce global dependencies on critical components that impact country's manufacturing capabilities	• Market consolidation leads to fewer stronger players

Digitalization accelerates → Robust **Software Based Infrastructure**

Complexity of Manufacturing IT

Workforce Requirements

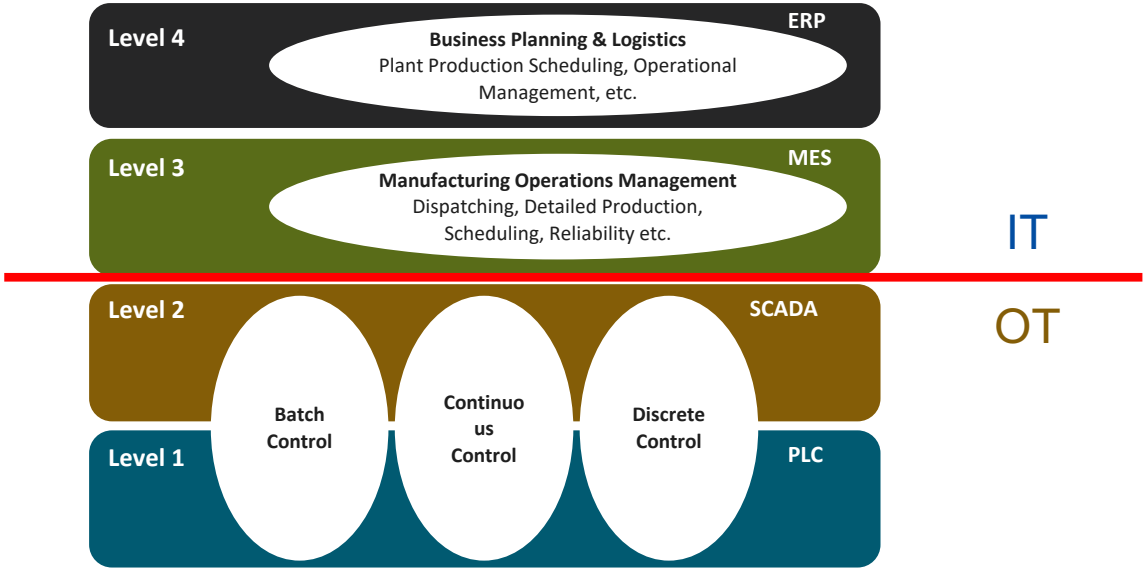
Highly Mobile Workforce

Multiple Work Sites

Complex/Variety Workloads

Security/Robustness

Manufacturing Control Systems (ISA -95)



Industry 4.0 requires solutions that could support convergence of systems and processes across the enterprise.

Nutanix makes DC deployment as easy as Tesla firmware upgrade

Use Case: Tesla Continuous Deployment of Firmware Deployments

Updates by Build/Day Model 3/Y (build-day-3Y)

Build	Name	#Updates	Today	7/12	7/11	7/10	7/09	7/08	7/07	7/06	7/05	7/04	7/03	7/02	7/01	6/30	6/29	6/14 to 6/28	5/14 to 6/13	4/14 to 5/13	1/14 to 4/13	10/15 to 1/13	7/14 to 10/25	7/14/19 to 7/12/20
2020.28.2		1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
2020.28.1		3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
2020.24.6.5		3	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
2020.20.17		14	-	1	-	-	3	3	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	14
2020.24.6.4		108	-	1	1	3	5	6	19	12	2	3	40	16	-	-	-	-	-	-	-	-	-	108
2020.24.6.3		3	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	3
2020.24.6.1		79	-	-	-	-	-	-	-	-	-	-	-	-	3	4	1	71	-	-	-	-	-	79
2020.24.6		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
2020.24.5.1		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
2020.20.13		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-	-	5
2020.20.11		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
2020.20.12		145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	104	-	-	-	-	145

*Source: https://ev-fw.com/track-reports.php

DevOps Engineer - Design Technology

We are seeking a DevOps Engineer to join the Design Technology team at Tesla. This team is esponsible to make product design work more efficient and accelerate the pace of design terations at Tesla across our whole portfolio of products (Passenger vehicles, Commercial ehicles, Energy & Solar).

The successful candidate will support the team's development and production environment, upport our CI/CD process, enable rapid development iteration and have a desire to build ighly available systems

Route to Competitiveness in the new Automotive landscape → Reducing Time-to-Market of (firmware) upgrades

Cloud Has Reset IT Expectations

Rapid Time to Market

Deploy apps in minutes

Pay-as-you-Grow

Only pay for what's needed

One-click Simplicity

No more mundane infra mgmt.

Continuous Innovation

Infra constantly gets better

IT Imperatives

- Lower overall TCO
- Minimize Infrastruct OPEX
- Get IT to be more agile and move faster

Public Cloud

- Scalable and elastic
- Cloud-native applications

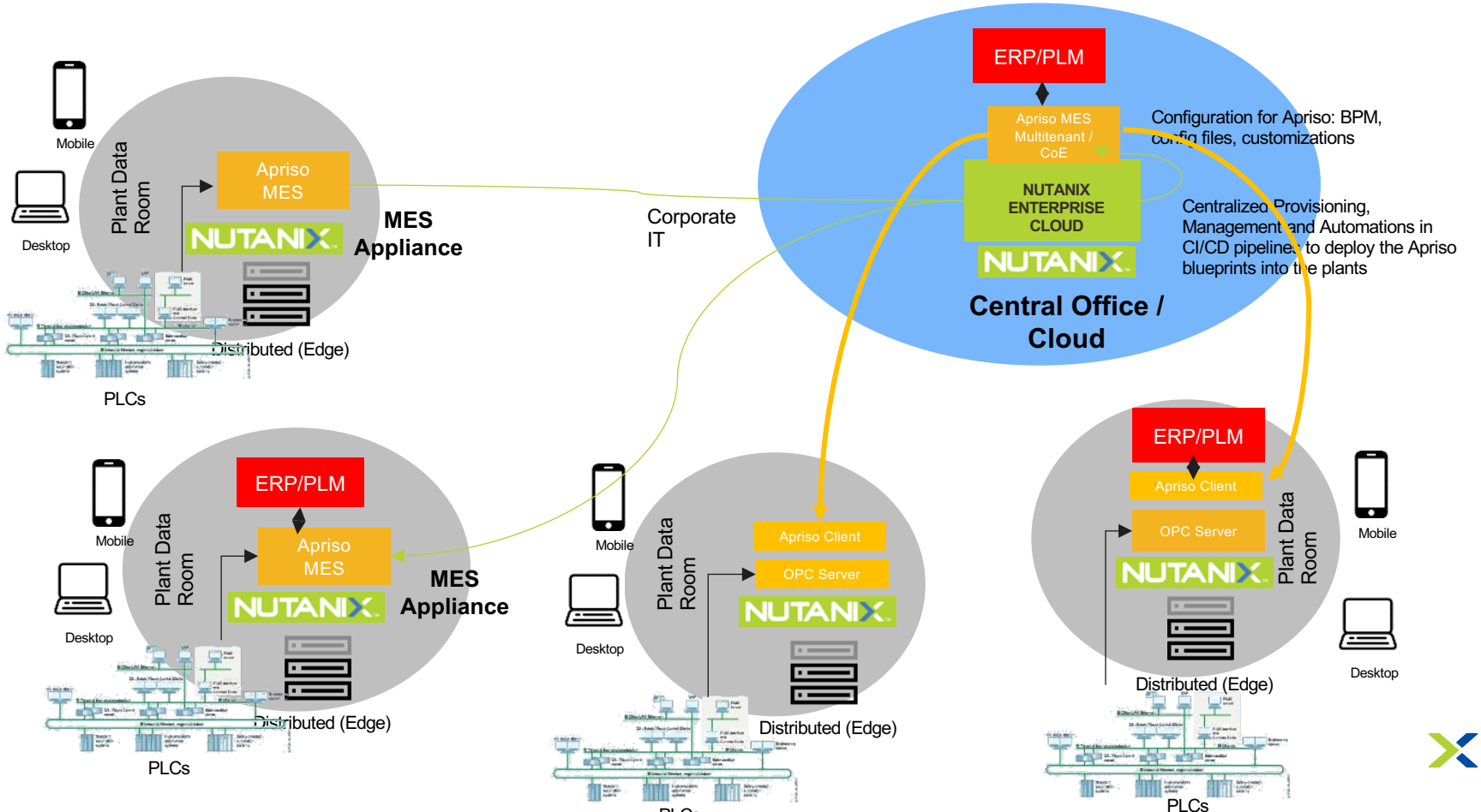
Private Cloud

- Predictable and secure
- Performance sensitive
- Mission-critical applications

Distributed Cloud

- Dispersed and small
- ROBO, Edge and IoT applications

Nutanix ROBO Solution Architecture – the distributed cloud



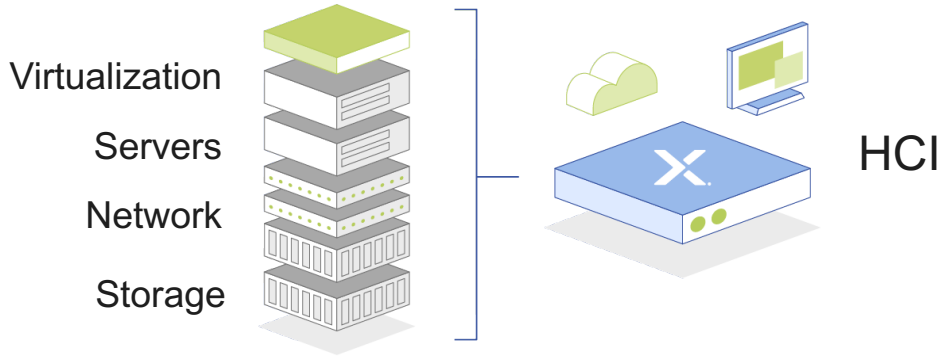
Nutanix Remote Office Branch Office Solution: Meeting The It Needs Of The Distributed Cloud

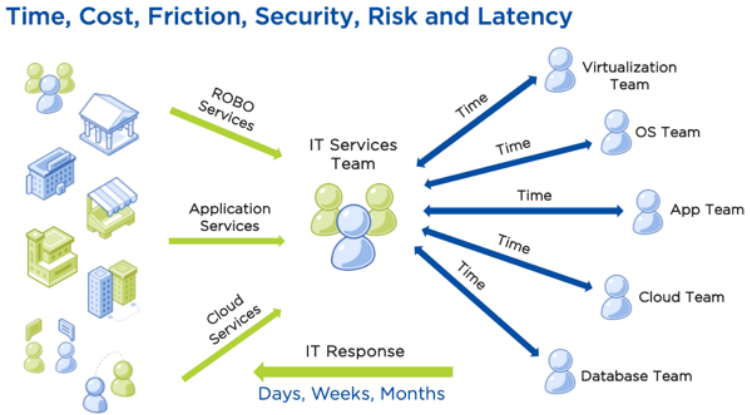
- ✓ *Make it easy to keep up with software upgrades and patches?*
- ✓ *Simplify ROBO and other edge infrastructure and make it easy to manage from a central location?*
- ✓ *Reduce the cost of purchasing, installing, and managing infrastructure at ROBO sites?*
- ✓ *Streamline ROBO backups and enable disaster recovery?*
- ✓ *Increase application performance and availability?*
- ✓ *Reduce footprint so infrastructure fits more easily when space is limited?*
- ✓ *Automate sw development?*
- ✓ *REDUCE PLANTS DEPLOYMENT TIMES FROM DAYS TO HOURS?*

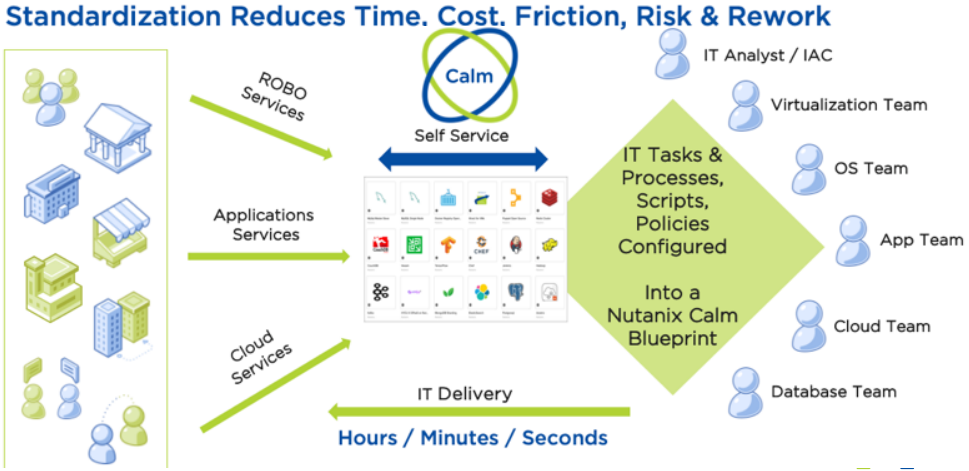
Nutanix Enterprise Cloud

Nutanix Enterprise Cloud Platform introduces Many Layers of Simplification

How to simplify and automate plants







One Click Plant as a Service Benefits

One-Click

Infrastructure Deployment & Management

- Centralized Provisioning and Management
- Fastest TTM plant deployment

Application Automation and Orchestration

- Self-service provisioning
- App deployment and governance
- Hybrid Cloud ready deployment

Operational Insights

- Behavior based alerting
- Intelligent remediation
- Consumer-grade search and dashboards

Planning

- Capacity planning
- One-click infrastructure optimization
- Just-in-time forecasting

Day 2 Operations

- Platform and Firmware Upgrades
- Backup and Restore
- Patching

NUTANIX

Reimagining Manufacturing IT