TUTTOCLOUD

Zero Client Computing -- Not Just Cost Saving

From Chase DIstributions

Presentation Section

A look at our presentation agenda

Opening

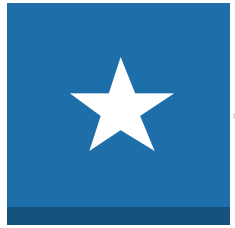
Welcome to TuttoCloud Sharing Computing & Zero Client Solution Presentation.

Introduction

A brief introduction and overview of the TuttoCloud Sharing Computing Solution.

Benefits

Core benefits that TuttoCloud offers to its end customers compared to the use of traditional PCs.



Highlights

Breakthrough technologies and key features that no other solutions can match.

Details

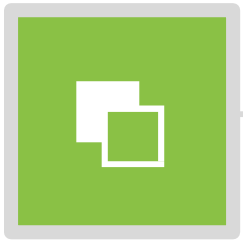
A close look at TuttoCloud Sharing Computing Solution– hardware and software.

Scenarios

Scenarios that are best suitable, not suggested or test needed for TuttoCloud deployments.

Comparisons

Competitive comparisons between TuttoCloud and the competed products in the market.

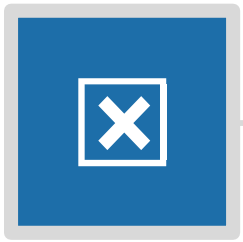


Questions

Frequent asked and your interested questions about our products and technologies.

Closing

Thanks for watching and we are looking to your joining the TuttoCloud Family.



Section End

A look at our presentation agenda

OPENING

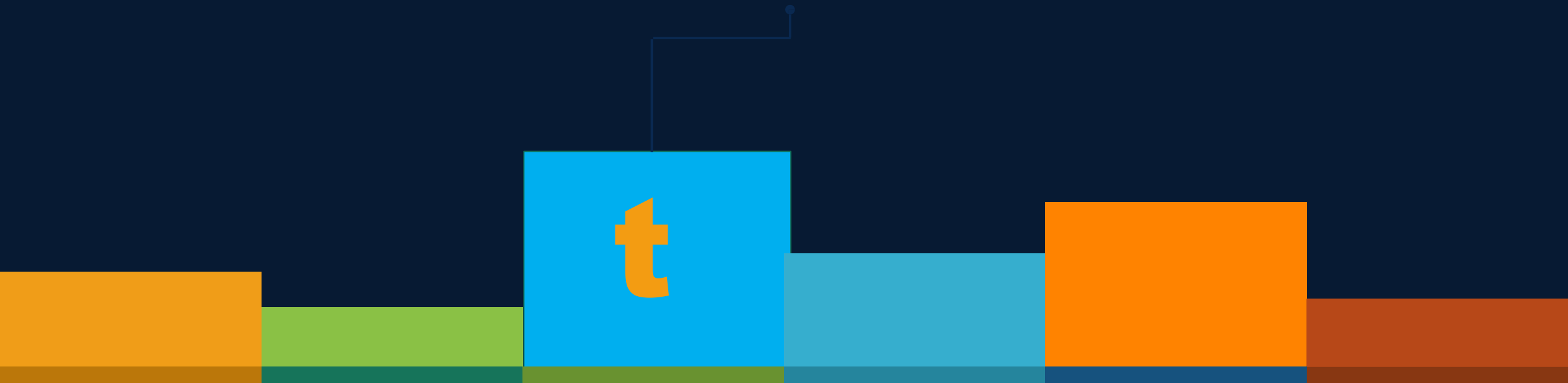
Welcome to TuttoCloud Presentation

Welcome

TuttoCloud Presentation

INTRODUCTION

A brief introduction and overview



Extend 1 PC to 100 Workstations

What is TuttoCloud?

TuttoCloud zero clients, combined with Tutto Server Manager software, provides an innovative way of desktop computing — Sharing Computing, which delivers the same PC experience desktops to users at a fraction of the cost of a typical PC solution, while still offering a variety of benefits over PCs.

Zero Client

TuttoCloud Hardware Device

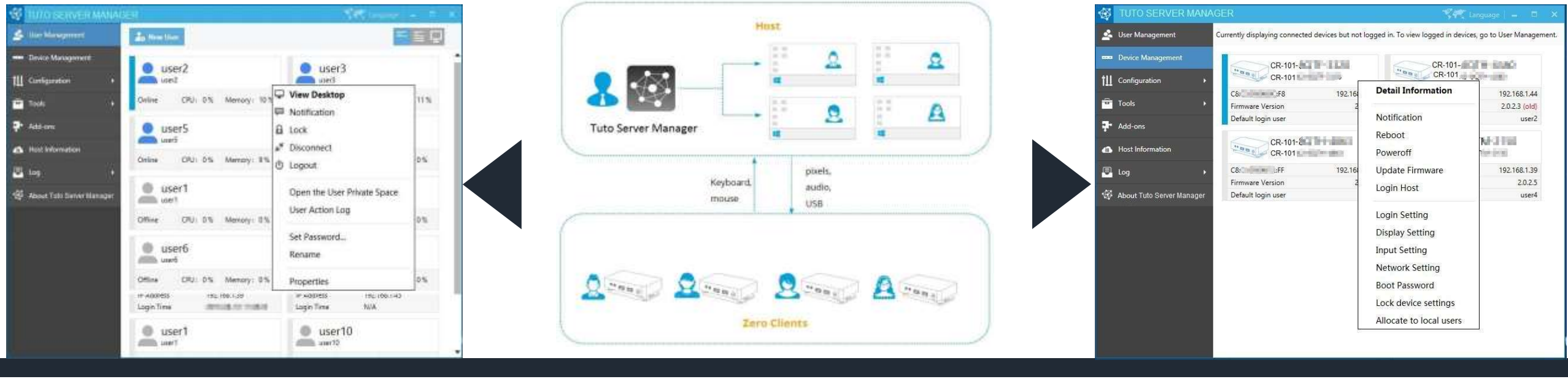
Tutto CR-101/202/303/404

The TuttoCloud zero client is a network computer terminal that effectively allows multiple of its users to simultaneously share the untapped resources of a PC desktop.

TuttoCloud zero client is also referred to as ultra-thin client, because it contains no moving parts but centralizes all processing and storage to just what is running on the host. As a result, it requires no local driver to install, no patch management, and no local operating system licensing fees or updates. The device consumes very little power and is tamper-resistant and completely incapable of storing any data locally, providing a more secure endpoint.

Tutto Server Manager

TuttoCloud Management Software



The Tutto Server Manager software, running on the host PC, enhances the overall functionality and usability of the sharing system by offering connection brokering, graphic acceleration, audio & USB redirection, centralized management. IT Administrators can configure, monitor and manage the endpoint devices and users centrally and simply at the server side through the front-end console.

BENEFITS

Core benefits compared to the use of traditional PCs.

Reduced Costs

Reduce initial and ongoing IT costs

70%

Savings in Capitial Cost

95%

Savings in Power Consumption

95%

Savings in Maintenance Cost

90%

Savings in Future Up-gradation

Simplified Administration

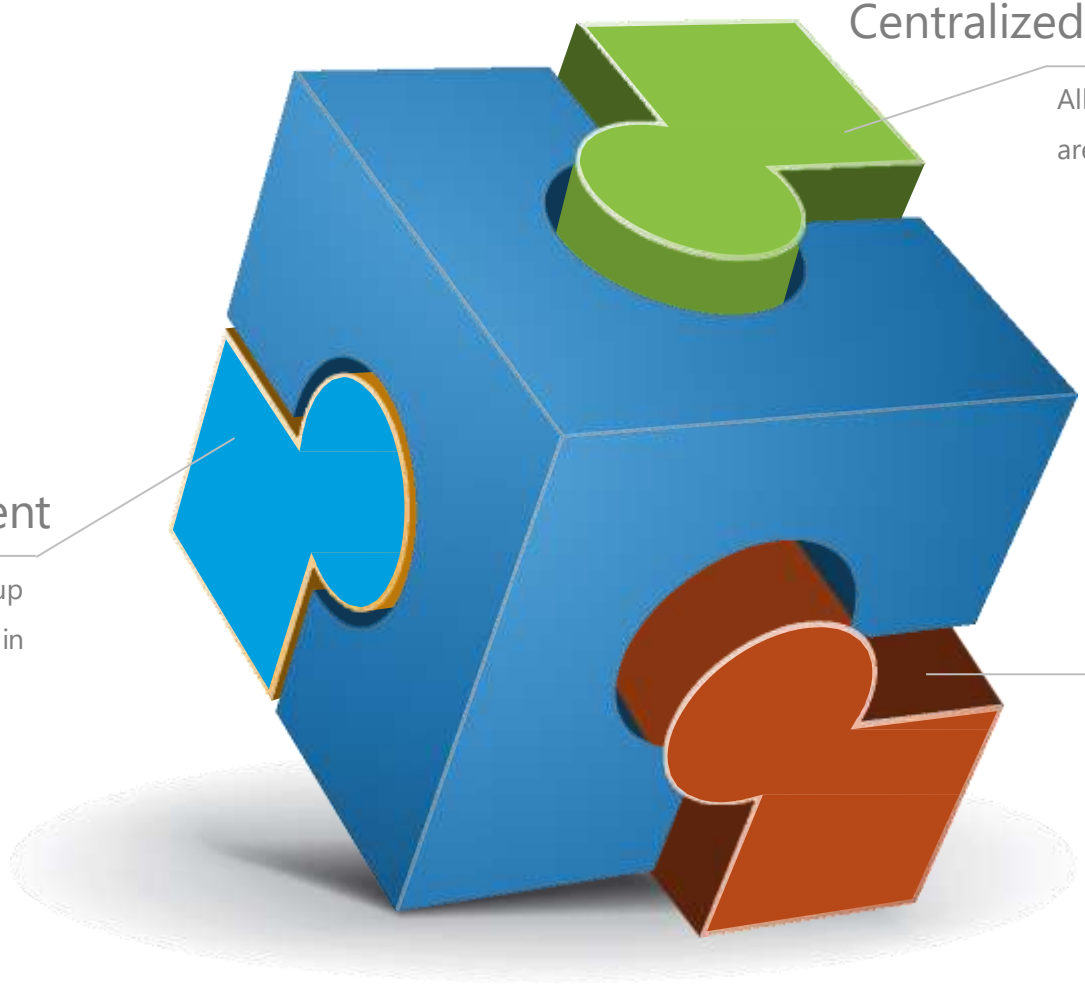
Allow administartors to manage centrally and remotely

Centralized Management

All installations, patches & updates are done on a single host.

Quick Deployment

A new workstation can be setup in seconds and a whole group in a few hours.



Remote Support

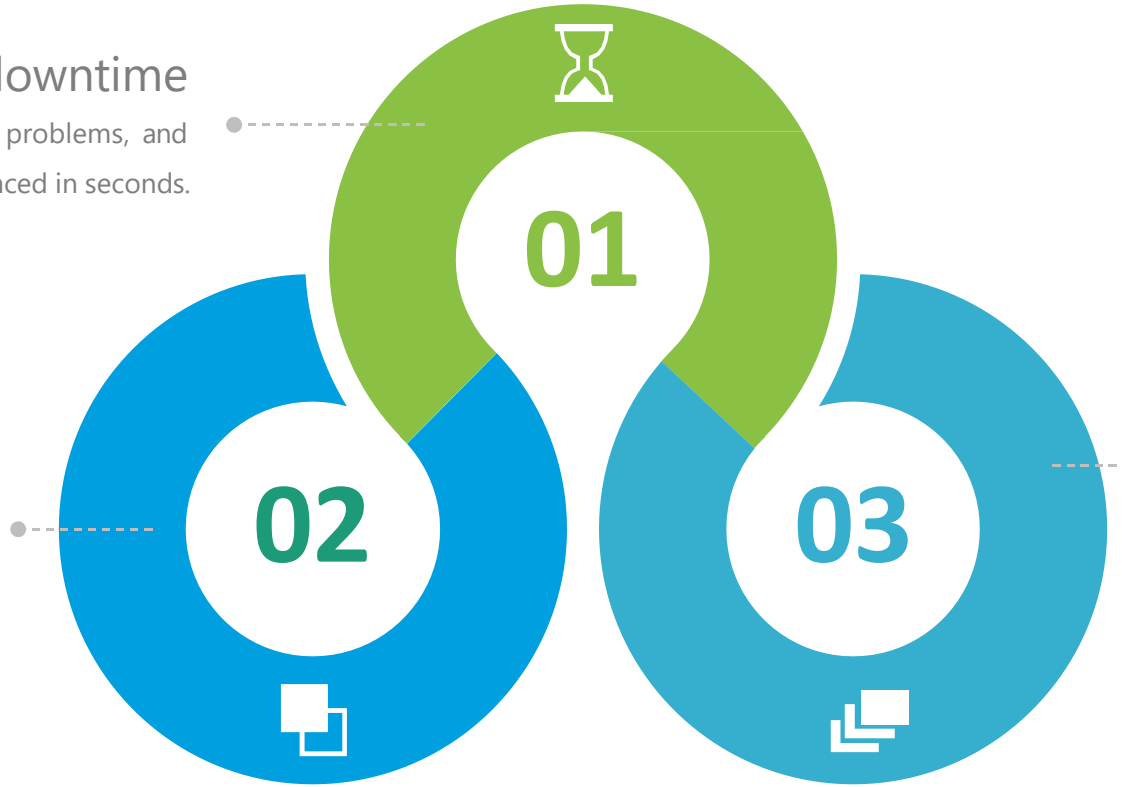
IT staff can provide support or from their desks through controlling over user desktops.

Improved Work Effciency

Let users work in a more efficient and cooperative way

Reduce unplanned downtime

With no desktop-related problems, and faulty clients can be replaced in seconds.



Roam from any client

With a simple log-off and then log-in from any other client, the user' is back with all in place.

Enable file sharing

Users can share and store files without the need to copy or transfer between desktops.

Enhanced Security

Provide a more secure computing environment

Eliminate virus infection

With no resident OS or storage, the zero client is immune to viruses and other malware.

Allow Security policies

Tutto server Manager allows IT staff to apply security policies, preventing users from copying confidential data.

Prevent from data lost

As the zero client does not store data locally, there is no data loss stemming from hardware failure or theft.

Environmental Friendly

Creat a nice working or learning environment

HIGHLIGHTS

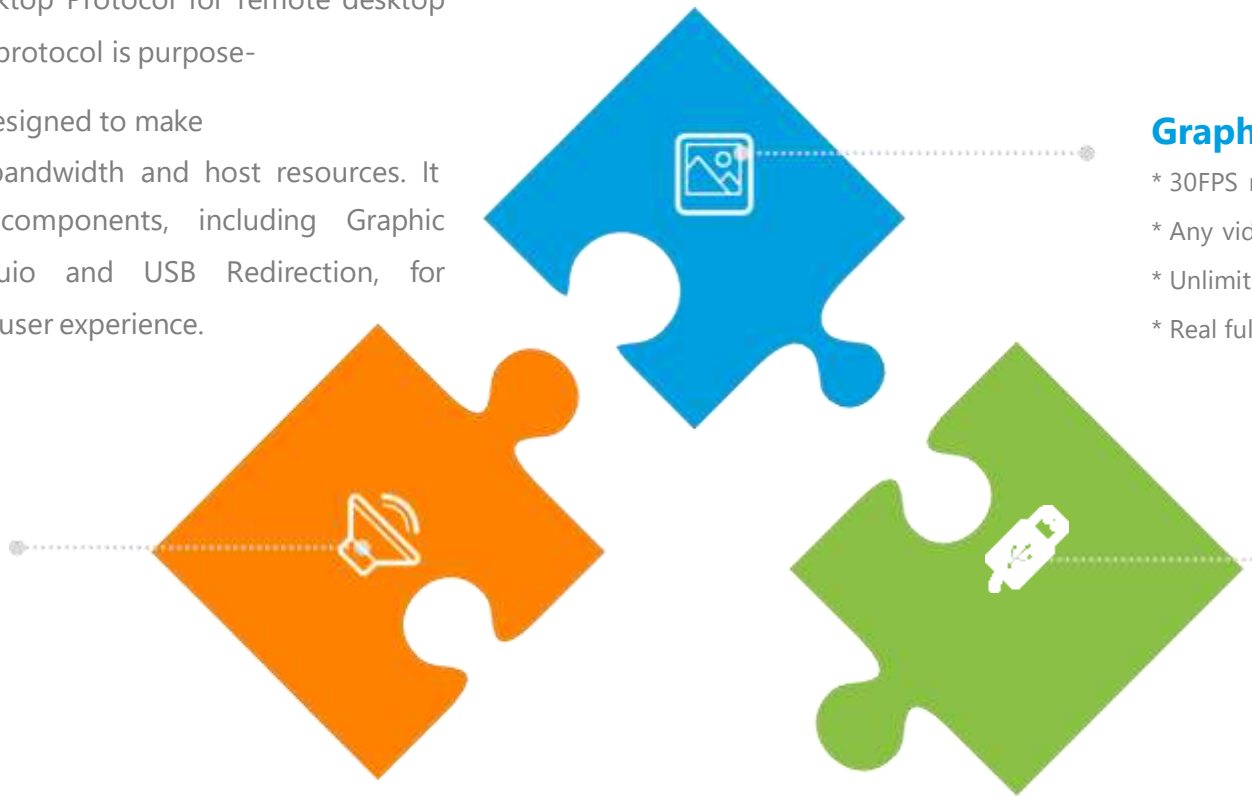
TuttoCloud Breakthrough technologies and key features

Dynamic Desktop Protocol (DDP)

TuttoCloud's innovative & highly efficient remote display protocol

About DDP:

TuttoCloud zero clients utilize its innovative Dynamic Desktop Protocol for remote desktop display. This protocol is purpose-built for zero clients and designed to make efficient use of network bandwidth and host resources. It consists of three key components, including Graphic Accceleration, Vitual Aduio and USB Redirection, for delivering a PC-equivalent user experience.



Graphic Acceleration

* 30FPS refreshment rate
* Any video formats, online & offline
* Unlimited no. of videos on one host
* Real full HD video up to 1920*1080

Virtual Audio

* Play& record in all popular Windows
* Reliable, plug & play anytime
* 16 bits, 44.1/48Khz high quality
* 0.1-0.2 sec latency, fully synchronized

USB Redirection

* A broad range of supported devices
* Reliable in all popular Windows
* No client driver is required
* No side issues or restrictions

Client Rendering

Offload host CPU consumption and support more video users

OFFLOAD

90%

host CPU consumption when running videos on the zero clients. No additional configurations. Just play with VLC media player.

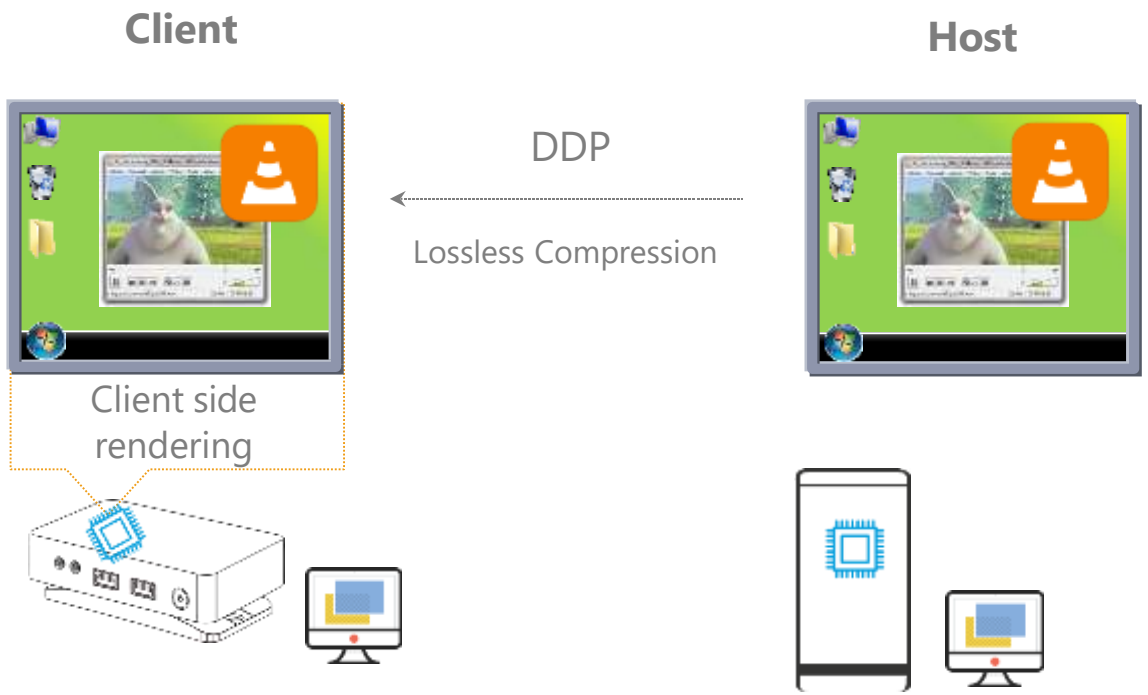
When a zero client user play a video with VLC media player, videos content is transmitted to the client and then rendered locally by the client processor instead of the host CPU.

VLC Player

Client rendering

Other Players

Host rendering

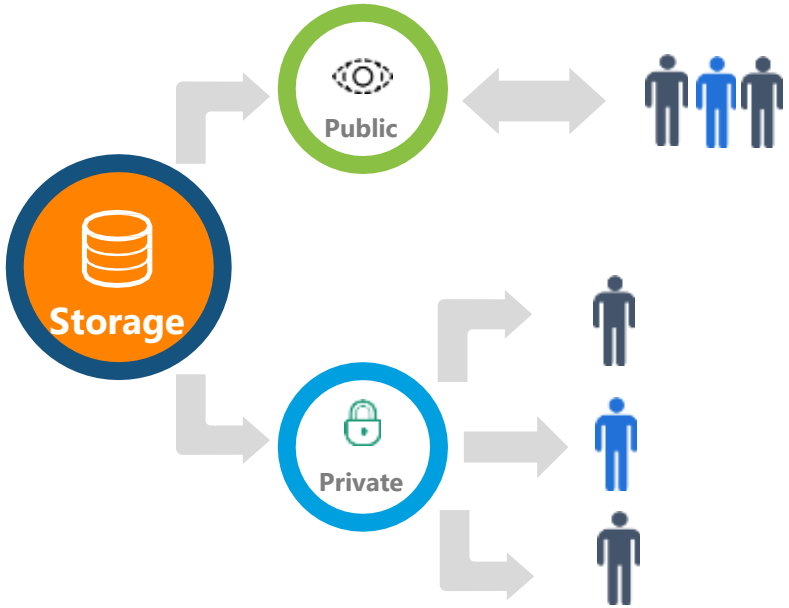


User Isolation

Each user has their own workspace of files and connected devices.

Storage Isolation

IT admin can set up public disk partitions in which files are visible and can be shared by all users and private partitions in which files in each user's virtual private partition are invisible to other users.

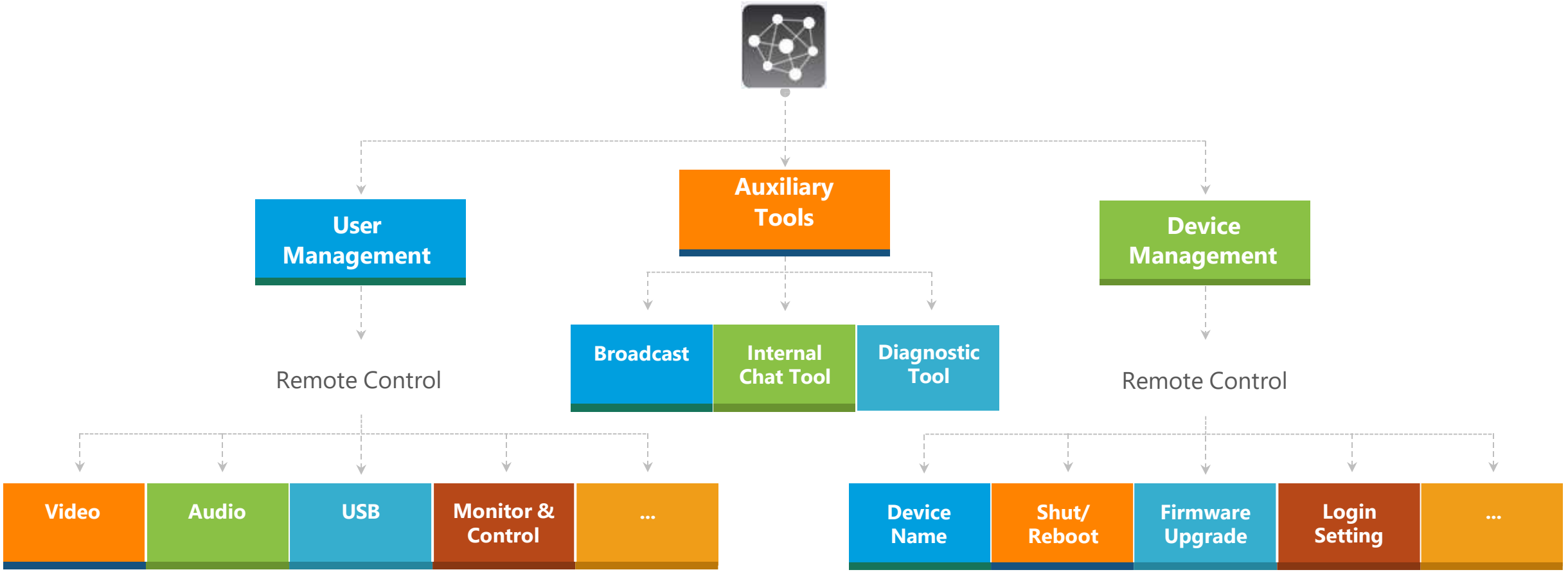


USB Isolation

USB Memory devices if connected to the host, they are accessible to all users, but if connected to TuttoCloud zero clients, they are lock down to the owner only.

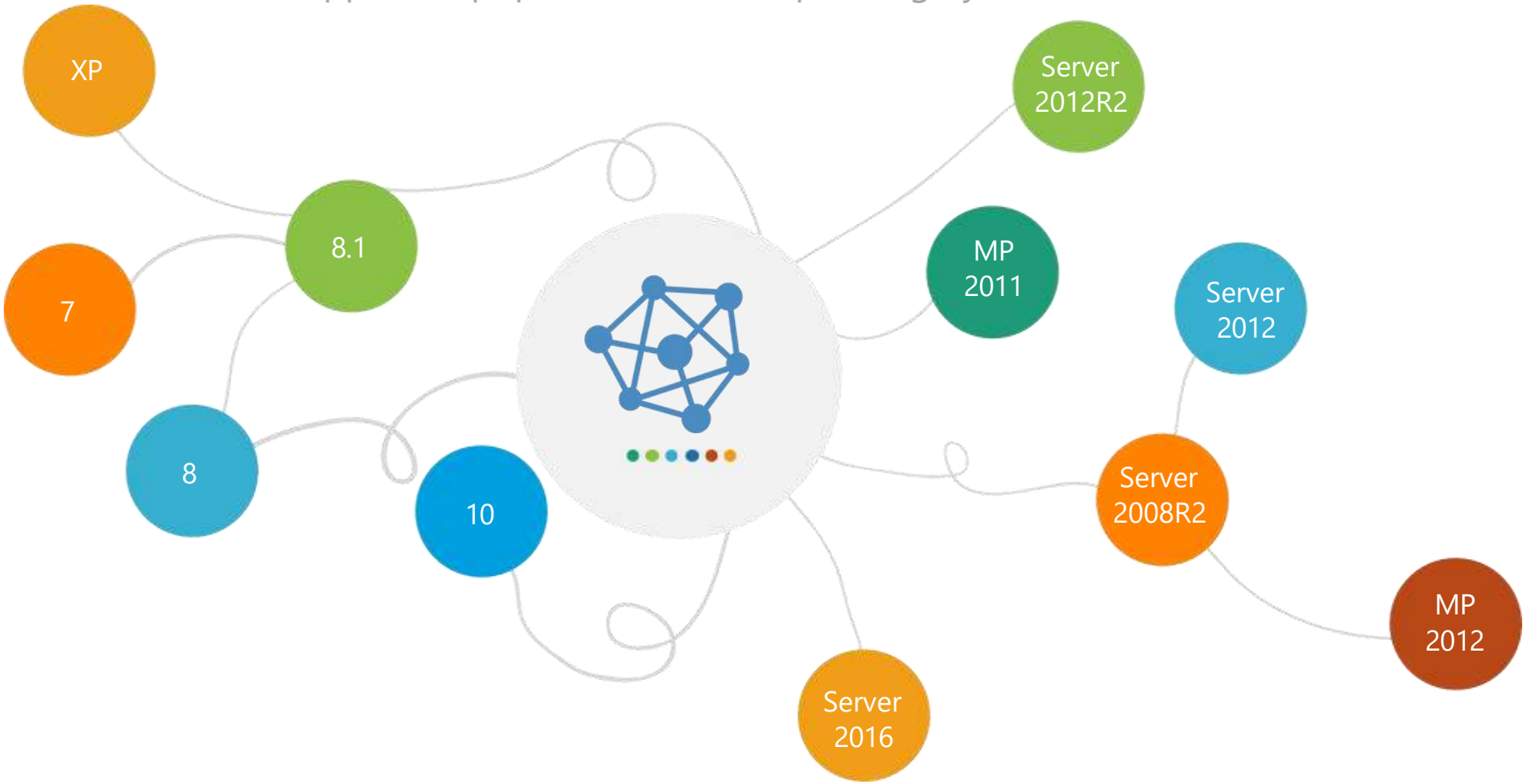
Powerful Management

Manage remotely and centrally from the host side



Broad Systems Support

Support all popular Windows Operating Systems

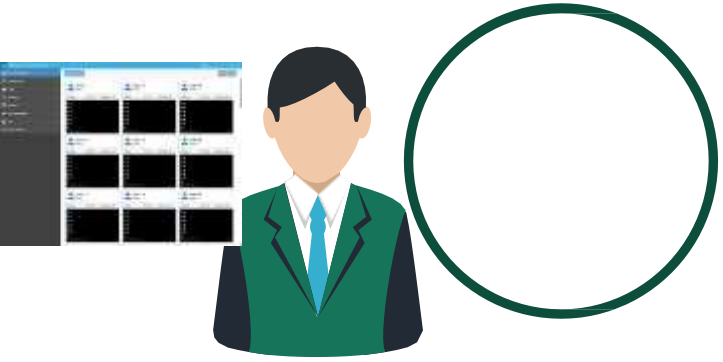


High Usability

Zero client computing-- never so simple

Users

Easy to use



Administrator

Easy to manage

No Configurations

One click software installation. Plug & play client devices. No configurations is required on host or clients. Install to manage, connect to work.

User-friendly Interface

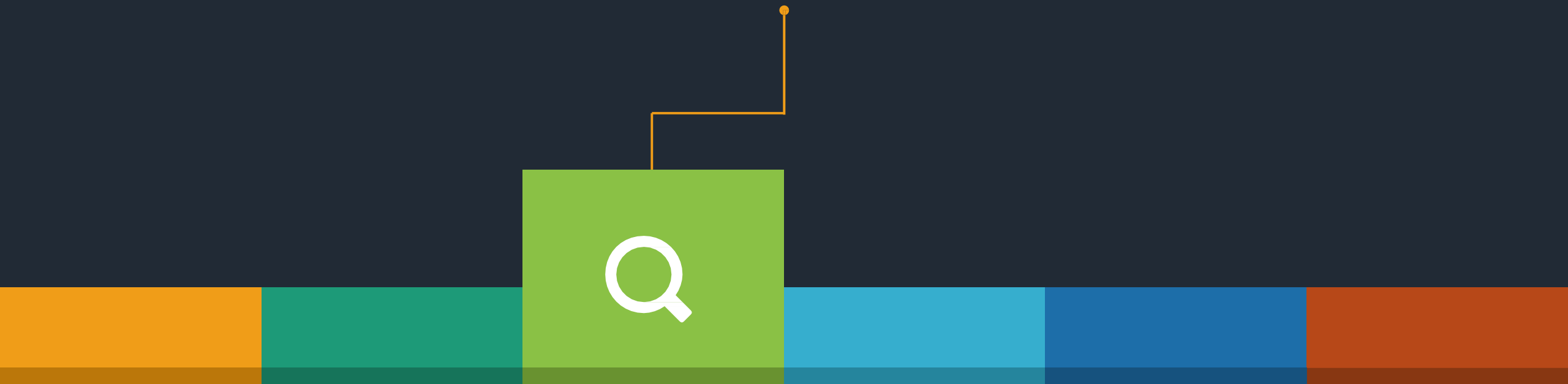
The user-friendly login interface allows discovery and inventory of in-LAN hosts, and automatic login. Only a click-on, users are ready to work.

Intelligible Instructions

The intelligible management interface offers features for novice to advanced administrators to manage at ease. No typical training is needed.

DETAILS

A close look at TuttoCloud Sharing Computing Solution



Extend 1 PC to 100 PCs

Tutto CR-101
Works With Management Software

TUTTO CLOUD

Enterprise/ Institution/ SMB Models Available

Tutto CR-303
Enterprise and Institution Edition

Tutto CR-202
Enterprise and Institution Edition

TUTTONICA™
Beyond Limits...

Tutto CR-404
Works Without Management Software

TUTTO CLOUD VARIANTS

Tuttonica Tutto CR-101

Processor	**Dual Core 1.2GHz**
RAM	512 MB
Memory	4 GB Flash
Video/Audio	HDMI, VGA, 3.5mm SPK & Mic
USB Ports	4 X USB 2.0
Software	Management Software (Installed on Server)
Supports	Windows 7/10, Windows Server 2012, Multipoint Server 2012

Tuttonica Tutto CR-202 (Education Edition)

Processor	**Quad Core 2.0GHz**
RAM	1 GB
Memory	8 GB Flash
Video/Audio	HDMI, VGA, 3.5mm SPK & Mic
USB Ports	4 X USB 2.0
Software	HManager & HServer(Installed on Server) Heacher (installed on Teacher's PC)
Supports	Windows 7/10, Windows Server 2012, Windows Server 2016

TUTTO CLOUD VARIANTS

Tuttonica Tutto CR-303

Processor	**Quad Core 2.0 GHz**
RAM	1 GB
Memory	8GB Flash
Video/Audio	HDMI, VGA, 3.5mm SPK & Mic
USB Ports	4 X USB 2.0
Software	HManager & HServer (Installed on Server)
Supports	Windows 7/10, Windows Server 2012, Windows Server 2016

Tuttonica Tutto CR-404

Processor	**Quad Core 1.2GHz**
RAM	512 MB
Memory	4 GB Flash
Video/Audio	HDMI, VGA, 3.5mm SPK & Mic
USB Ports	3 X USB 2.0
Protocol	RDP 7.1
Supports	Windows 7/8/10, Linux, Windows XP

Package Content

A client device, a power supply, a bracket/ base and two screws.

* Tutto CR-101 zero client

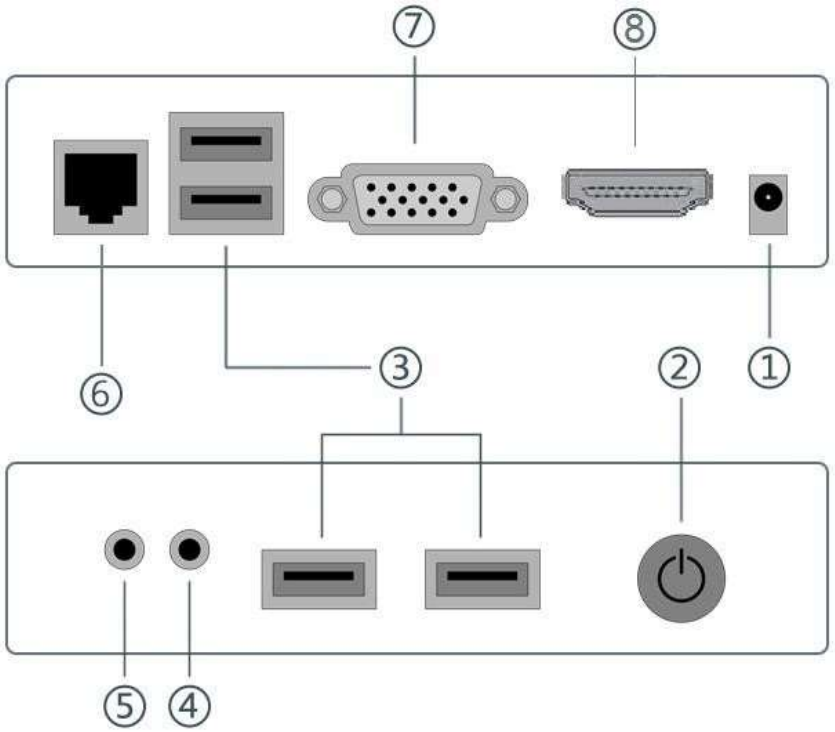
* 5V DC power adapter (EU/UK/US)

* backmount bracket/ base

* 2 screws

Device Connections

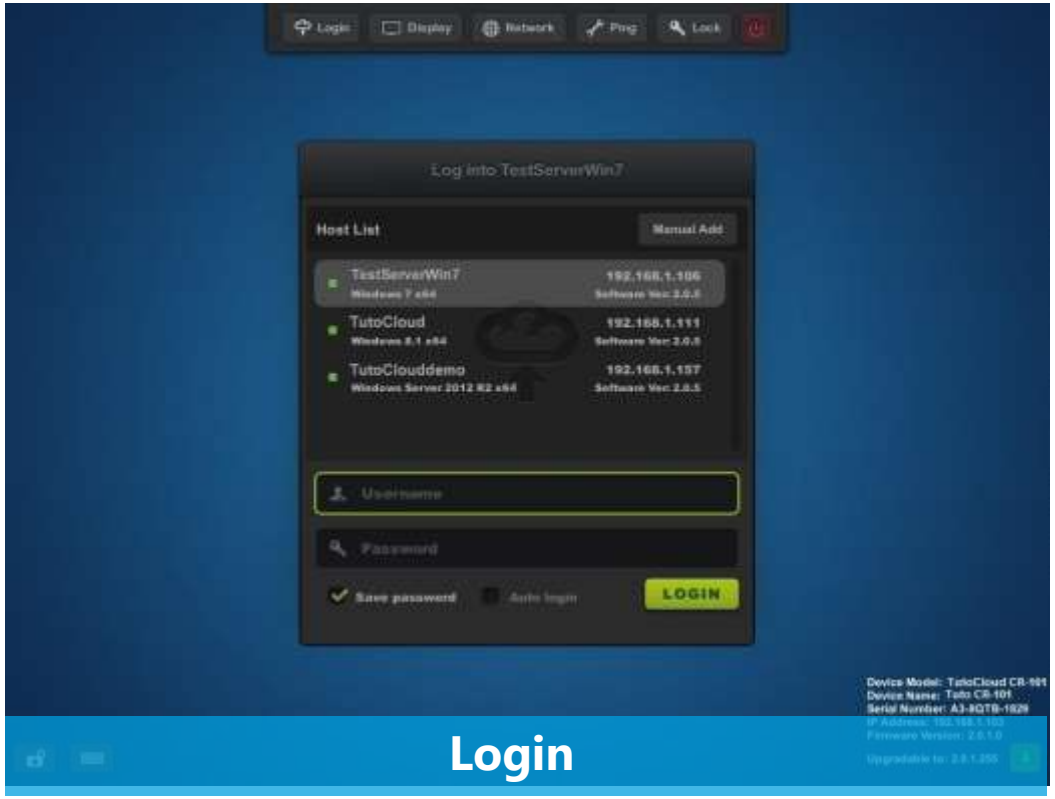
Tutto CR-101 zero client front and rear connections



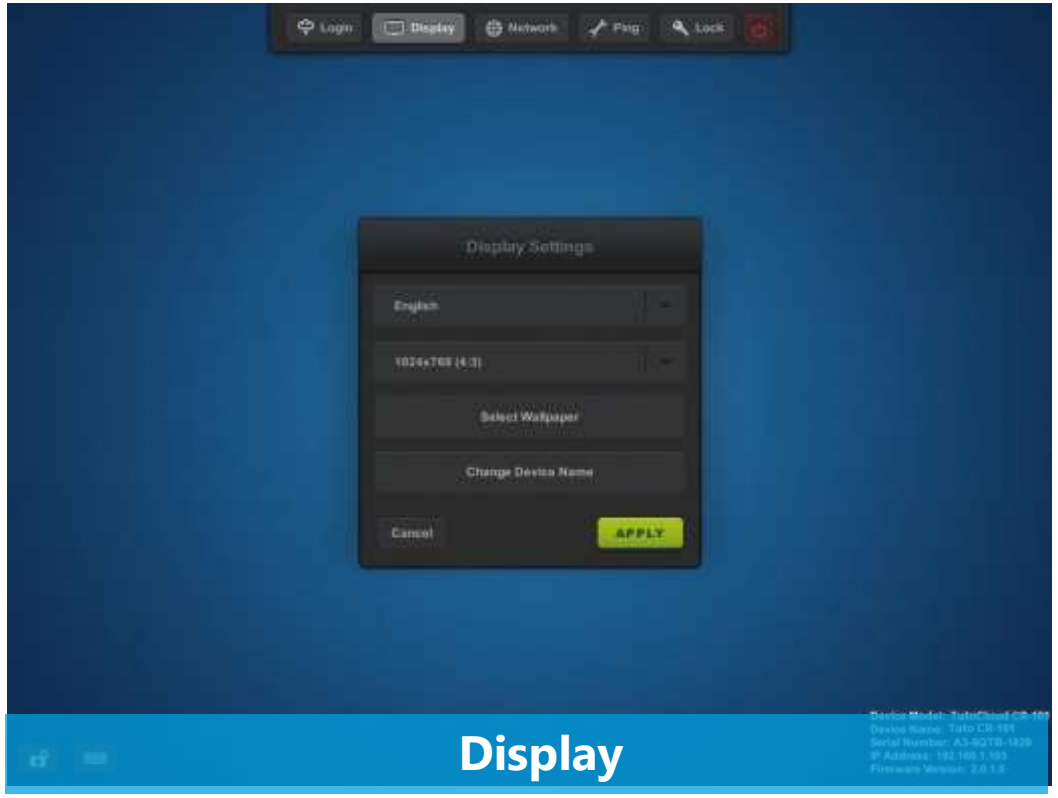
1. 5V DC Power Input
2. Power/ Reset Button
3. USB2.0 Ports
4. 3.5mm Mic Jack
5. 3.5mm Speaker Jack
6. RJ45 Ethernet Input
7. VGA Port
8. HDMI Port

Device Interface (1)

Tutto CR-101 zero client interface



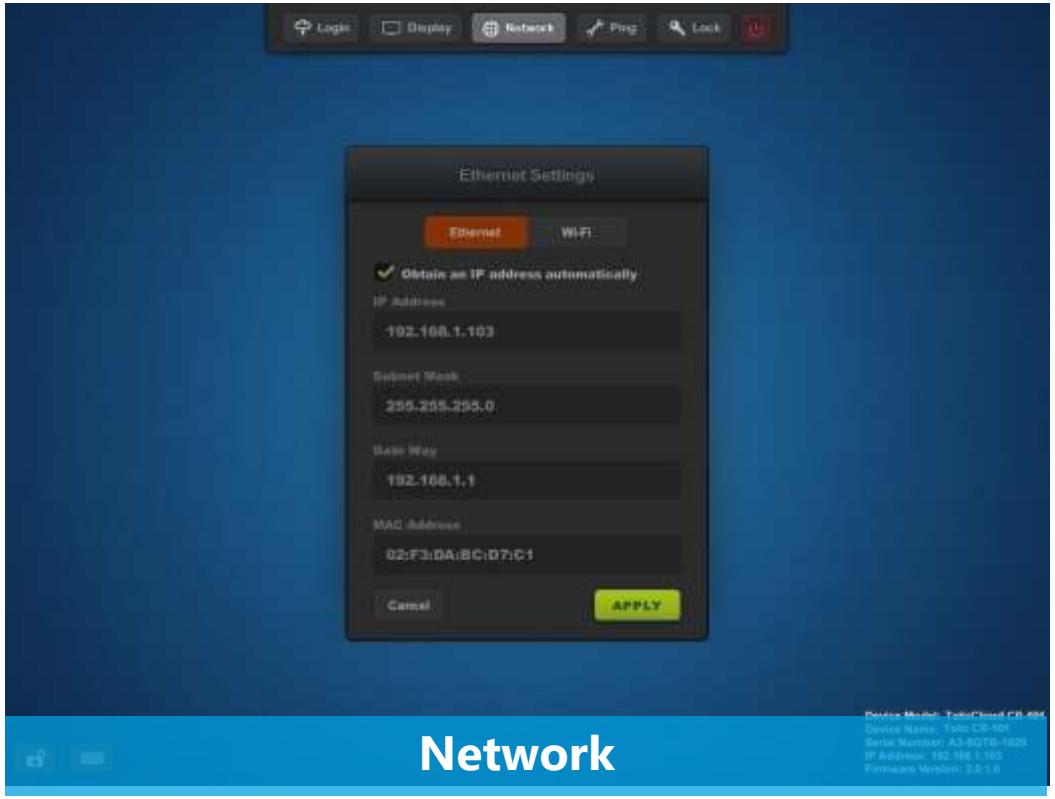
Login



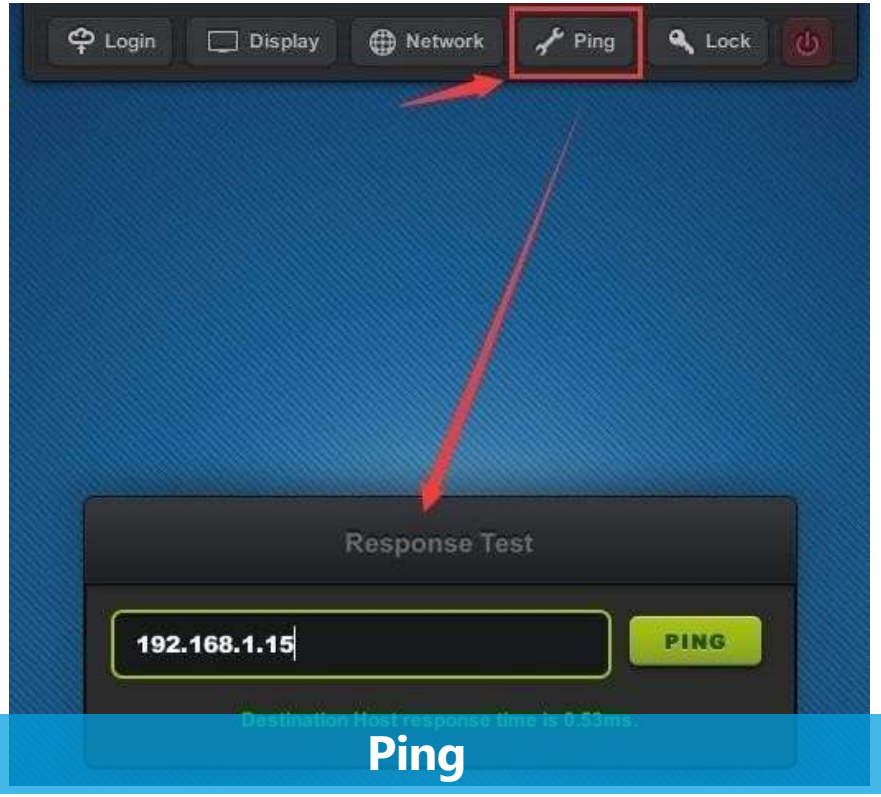
Display

Device Interface (2)

Tutto CR-101 zero client interface



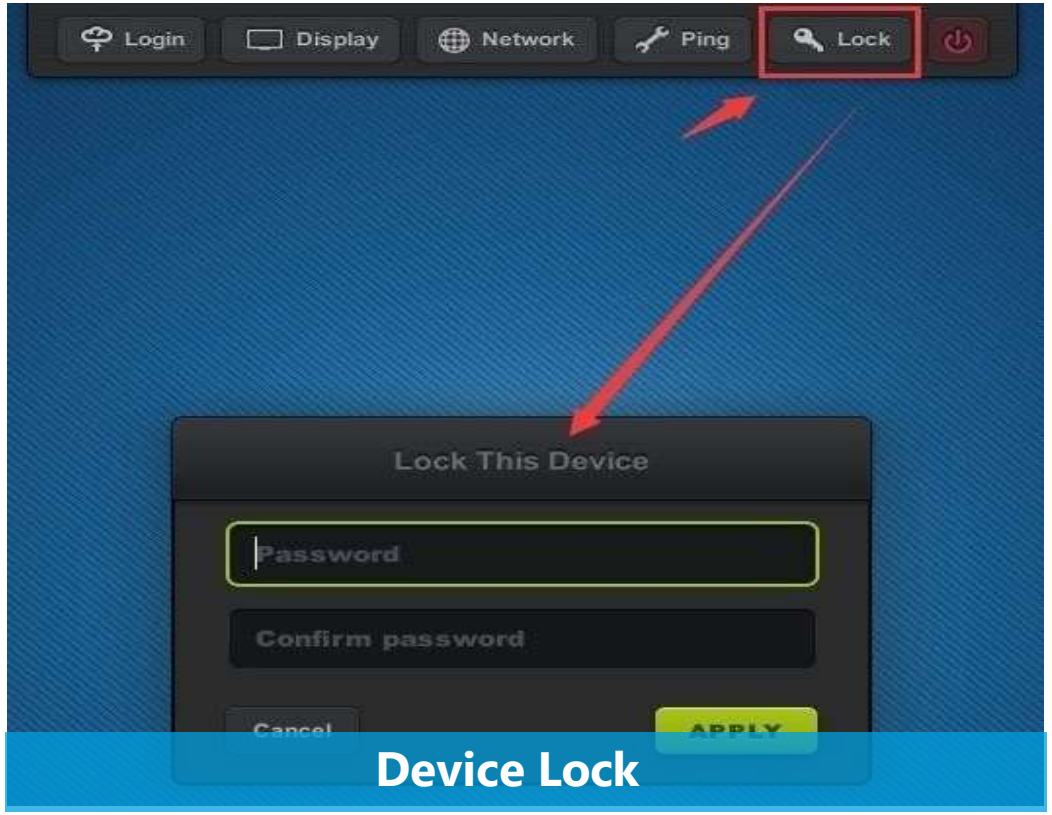
Network



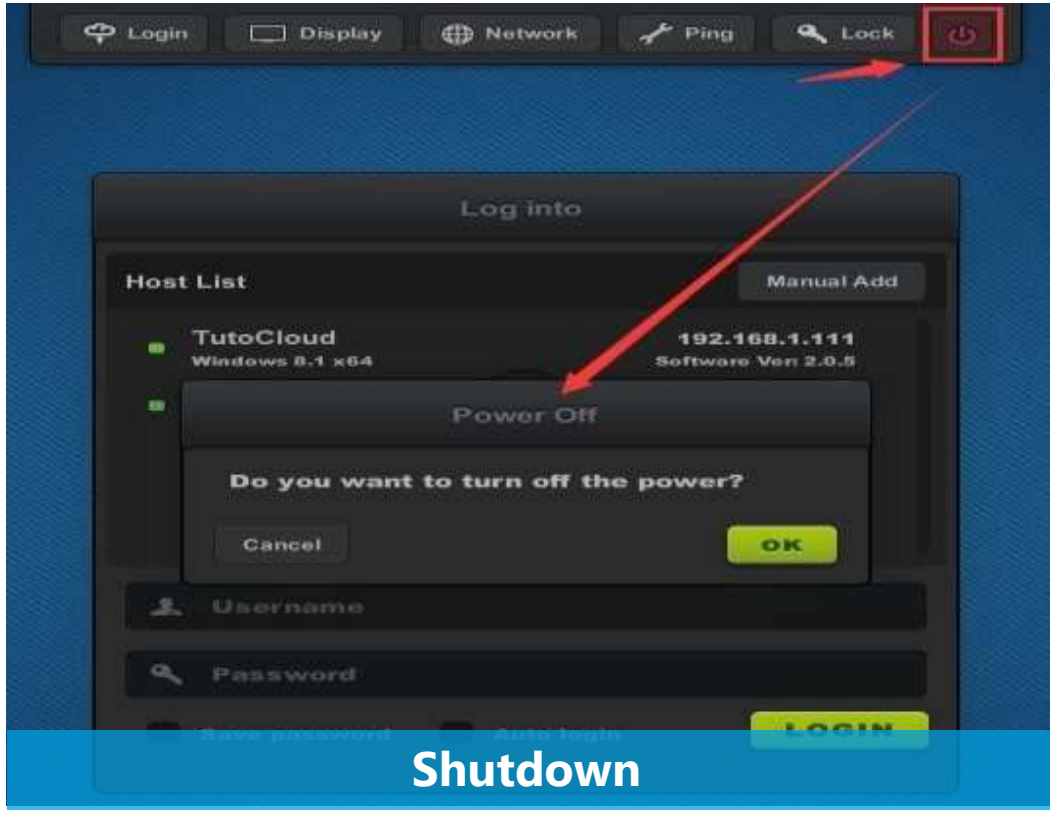
Ping

Device Interface (3)

Tutto CR-101 zero client interface



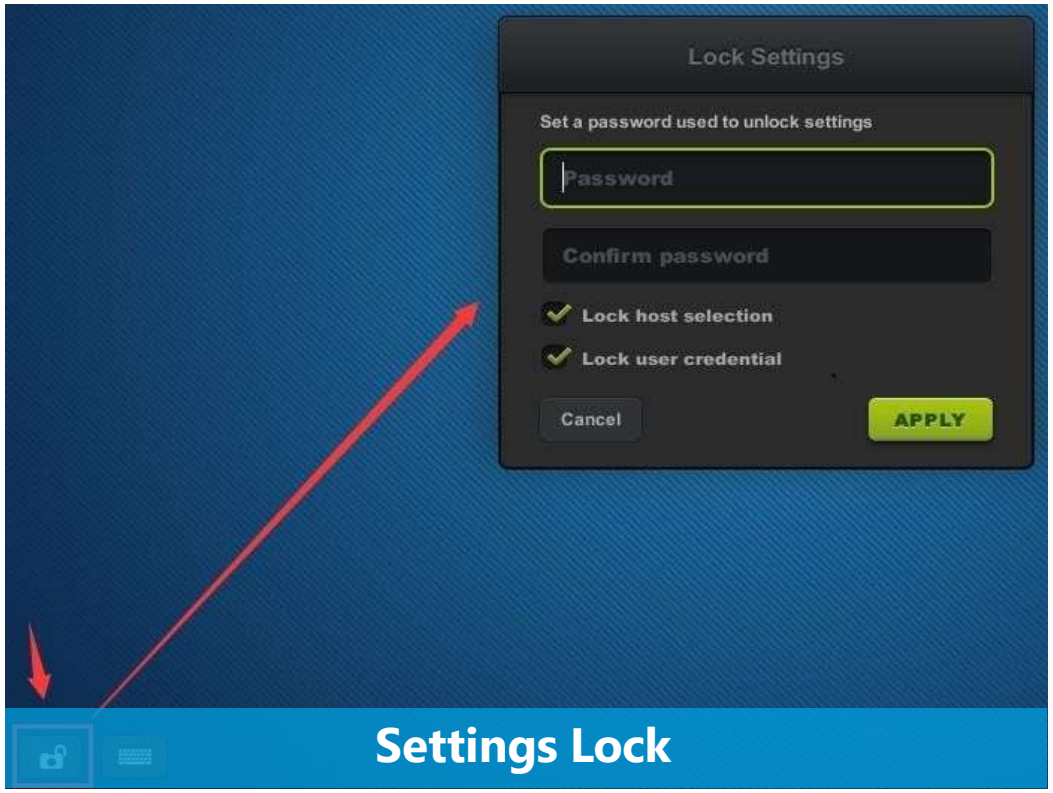
Device Lock



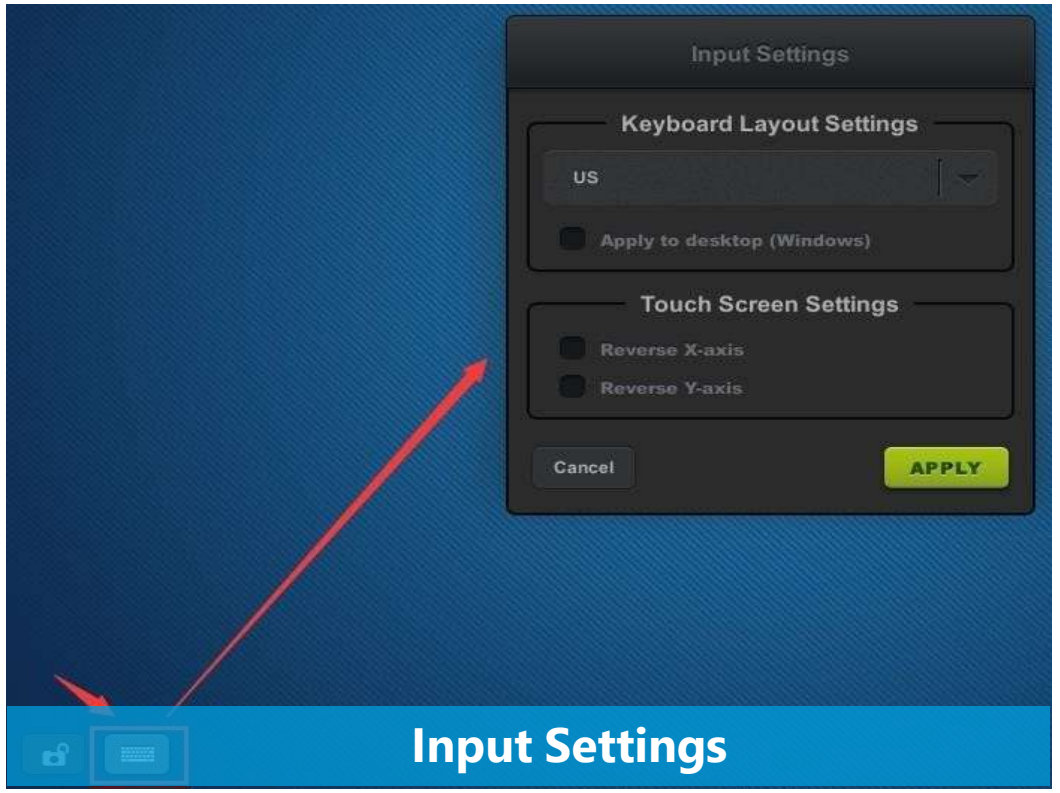
Shutdown

Device Interface (4)

Tutto CR-101 zero client interface



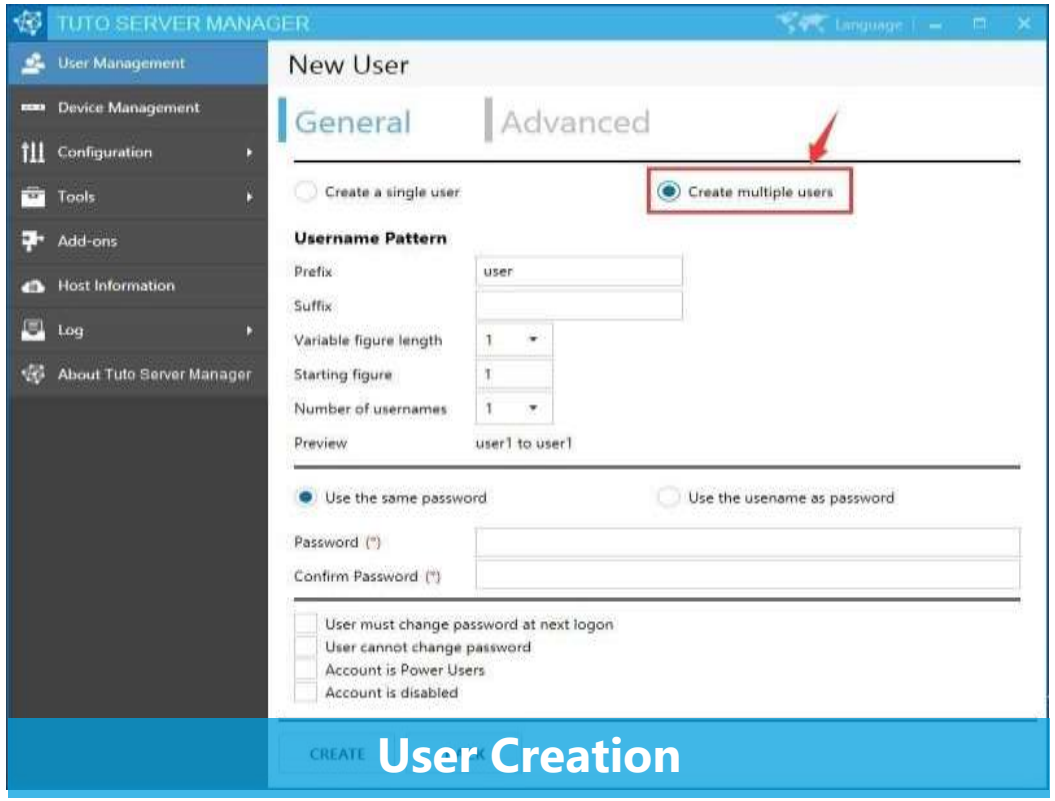
Settings Lock

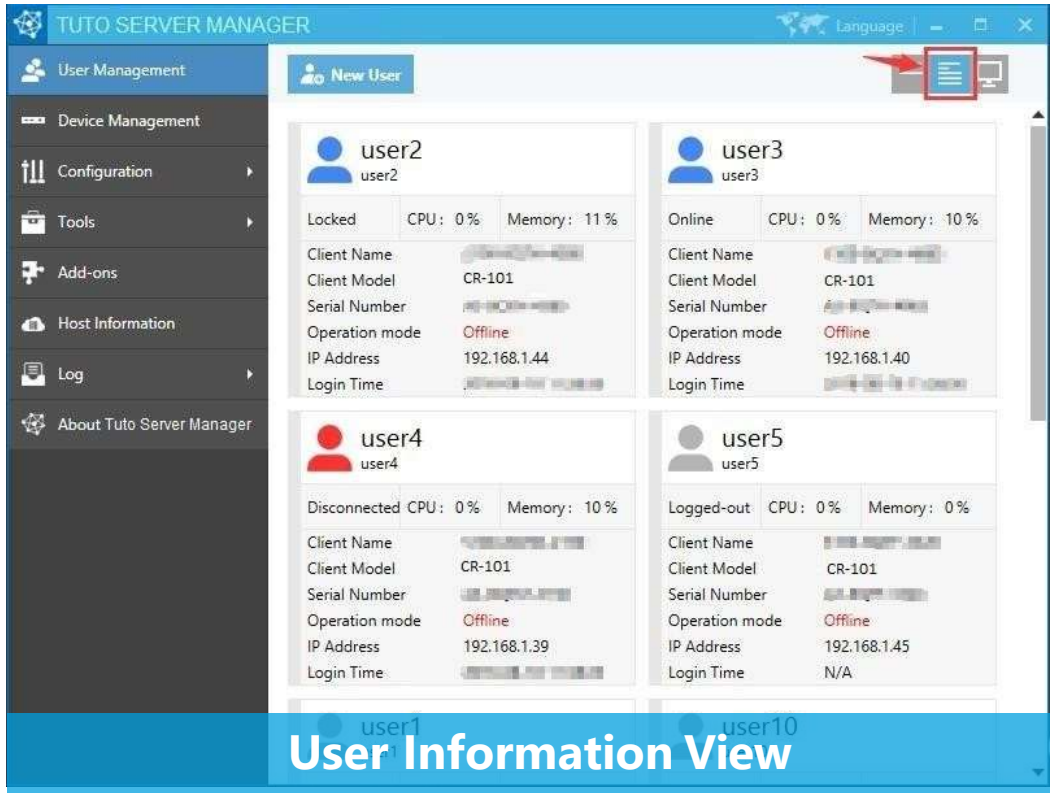


Input Settings

Software Interface (1)

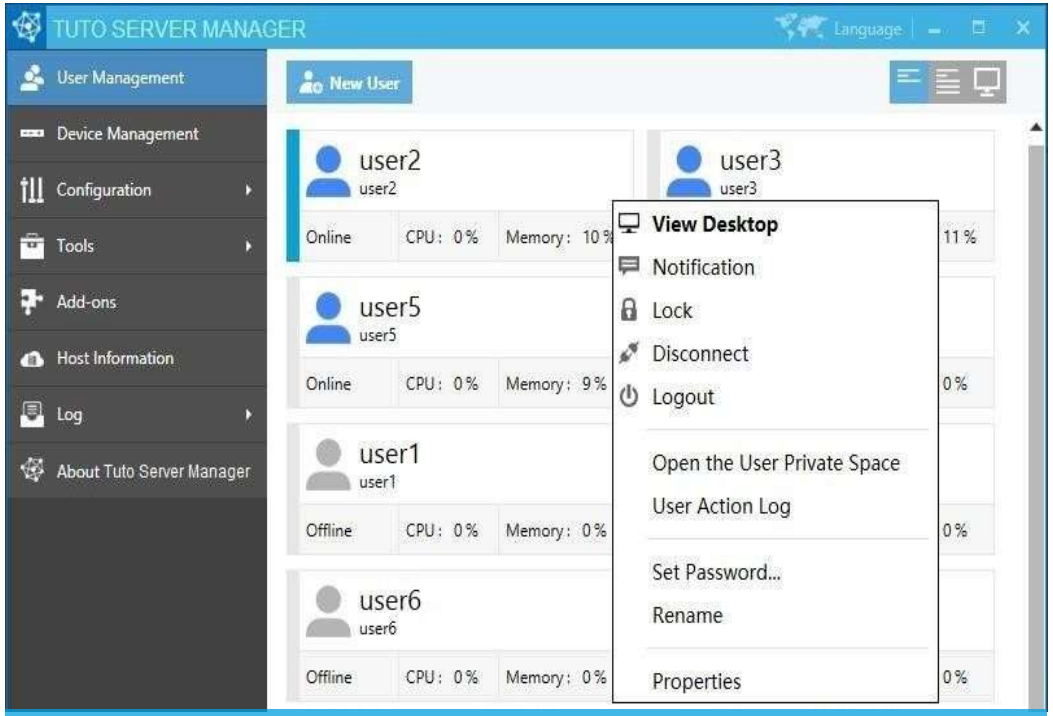
Tutto Server Manager console





Software Interface (2)

Tutto Server Manager console

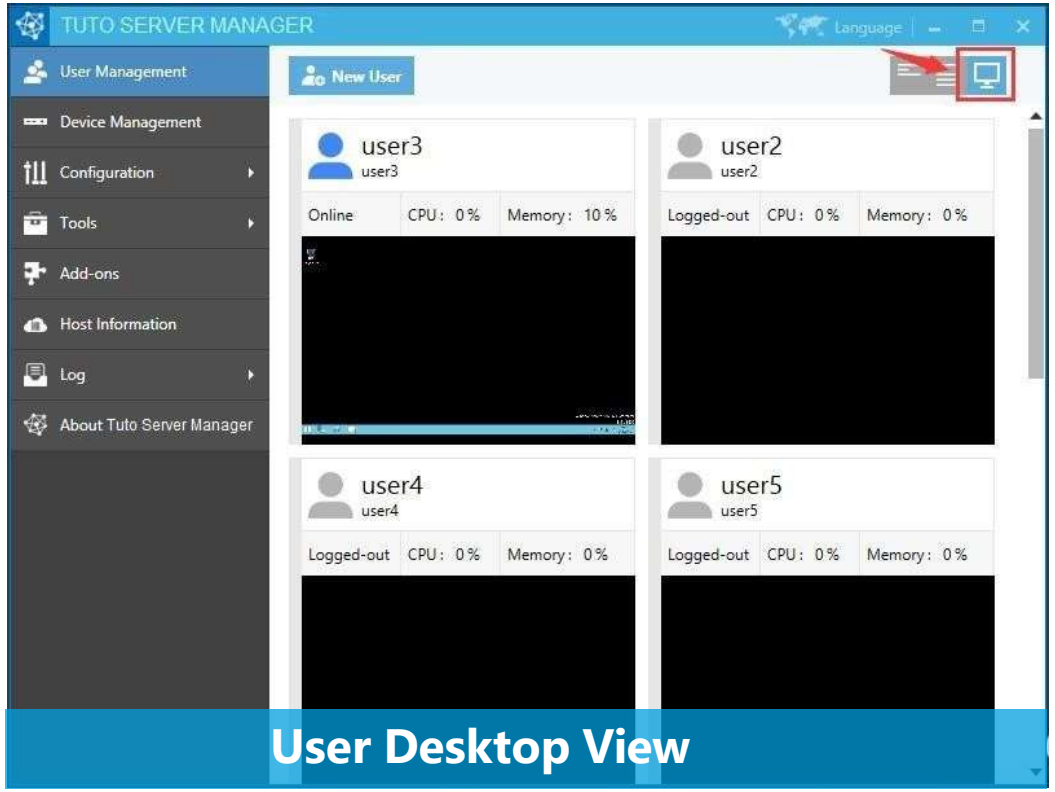


General User Management

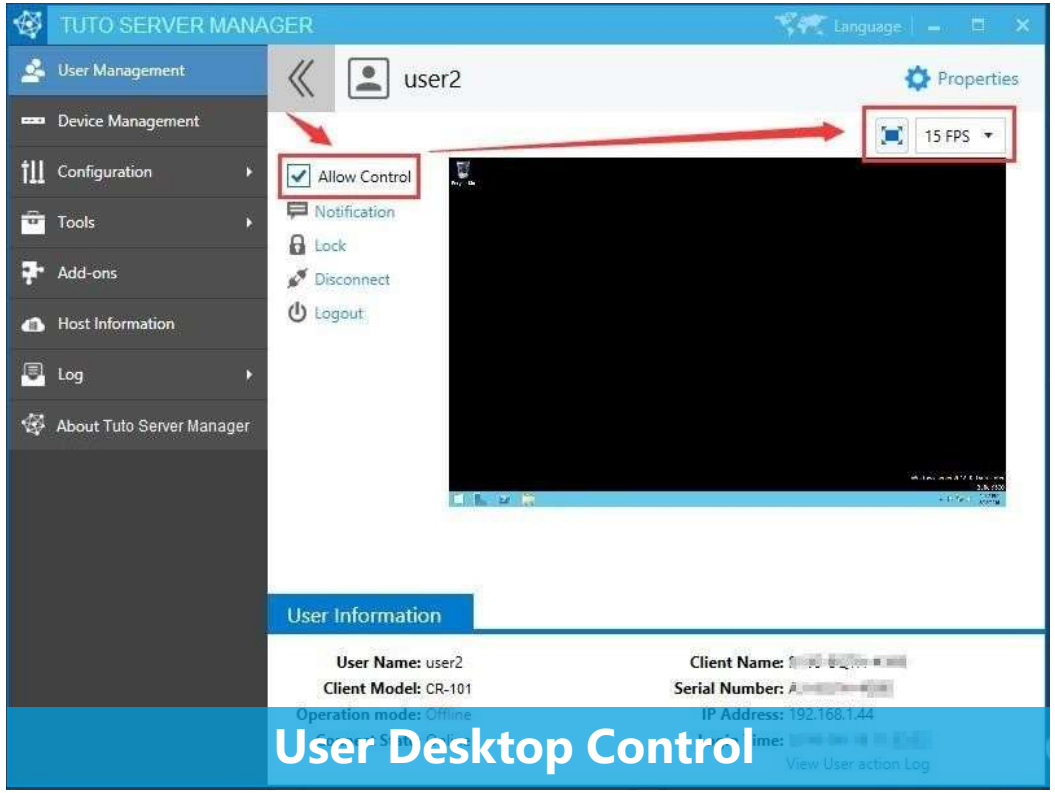
Advanced User Management

Software Interface (3)

Tutto Server Manager console



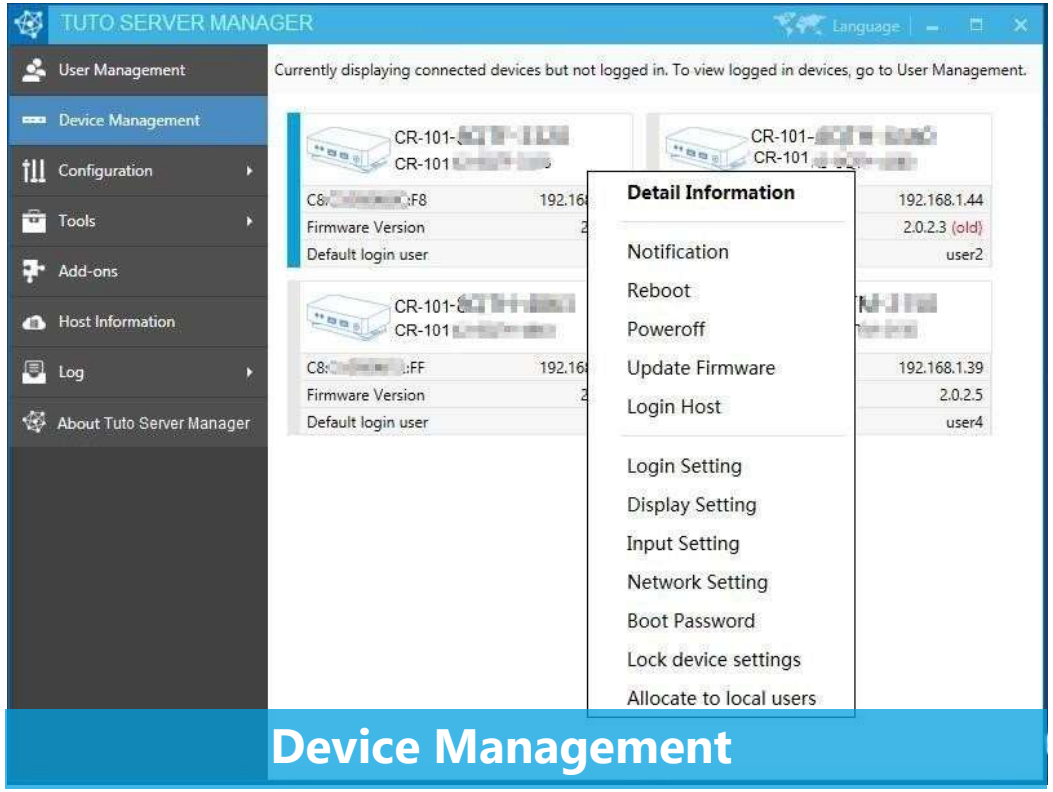
User Desktop View



User Desktop Control

Software Interface (3)

Tutto Server Manager console

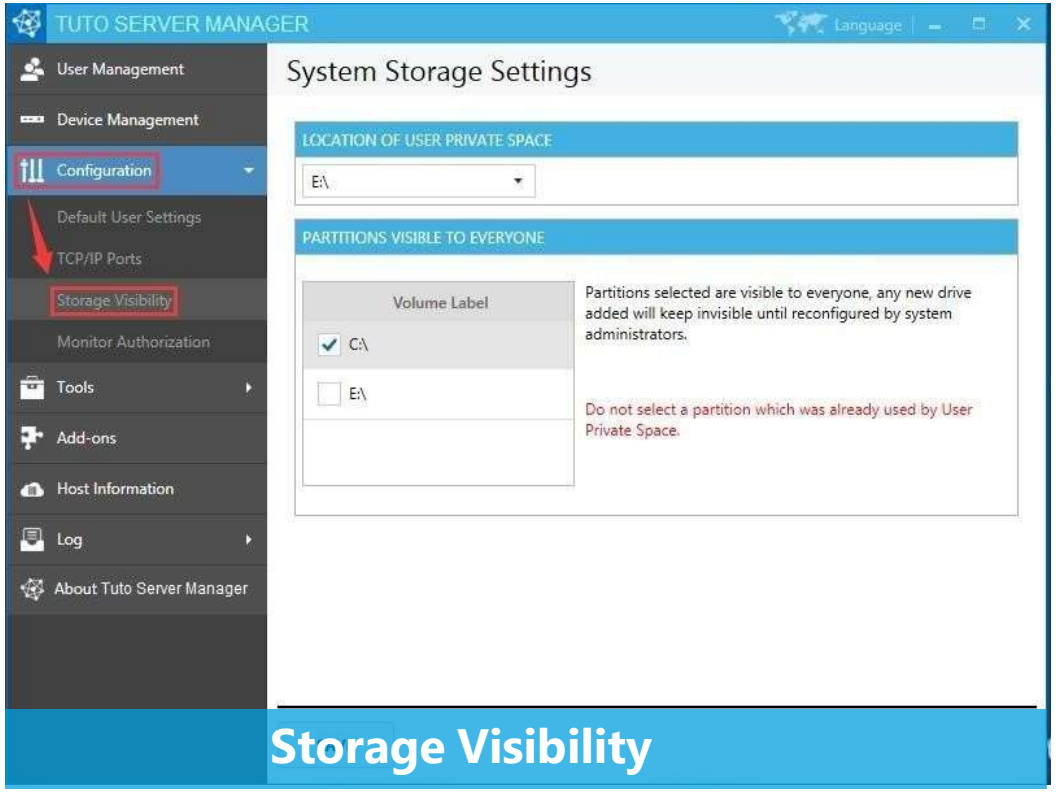


Device Management

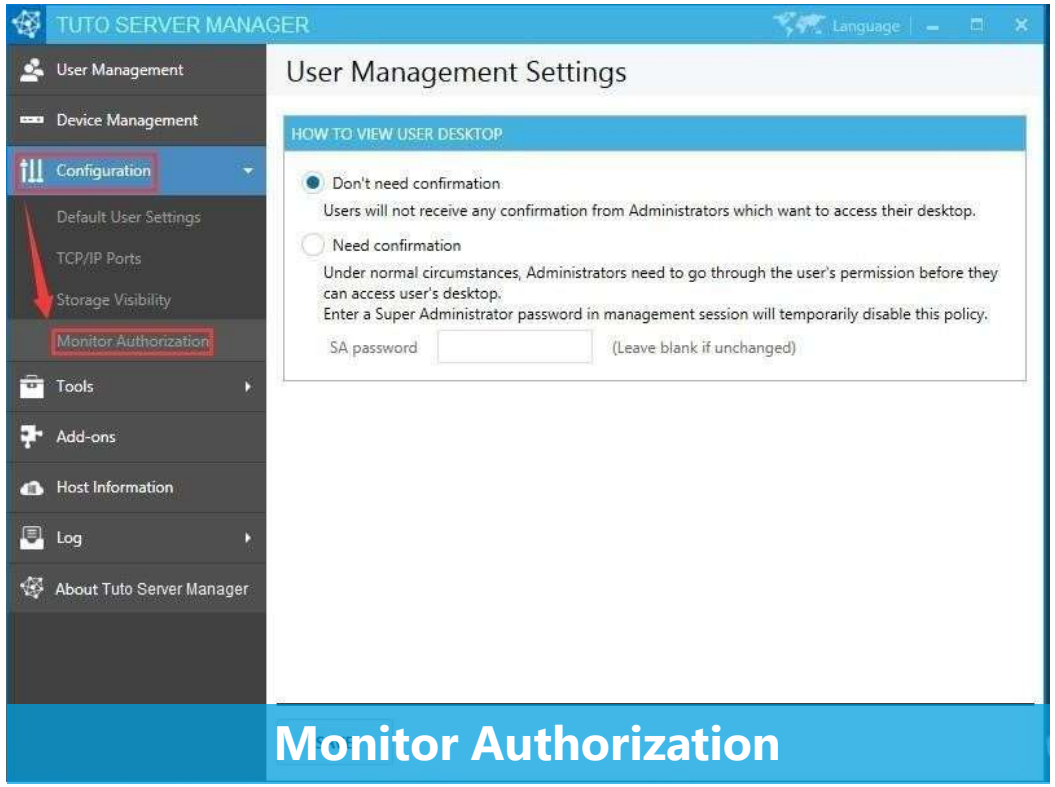
View & Change Device Settings

Software Interface (4)

Tutto Server Manager console



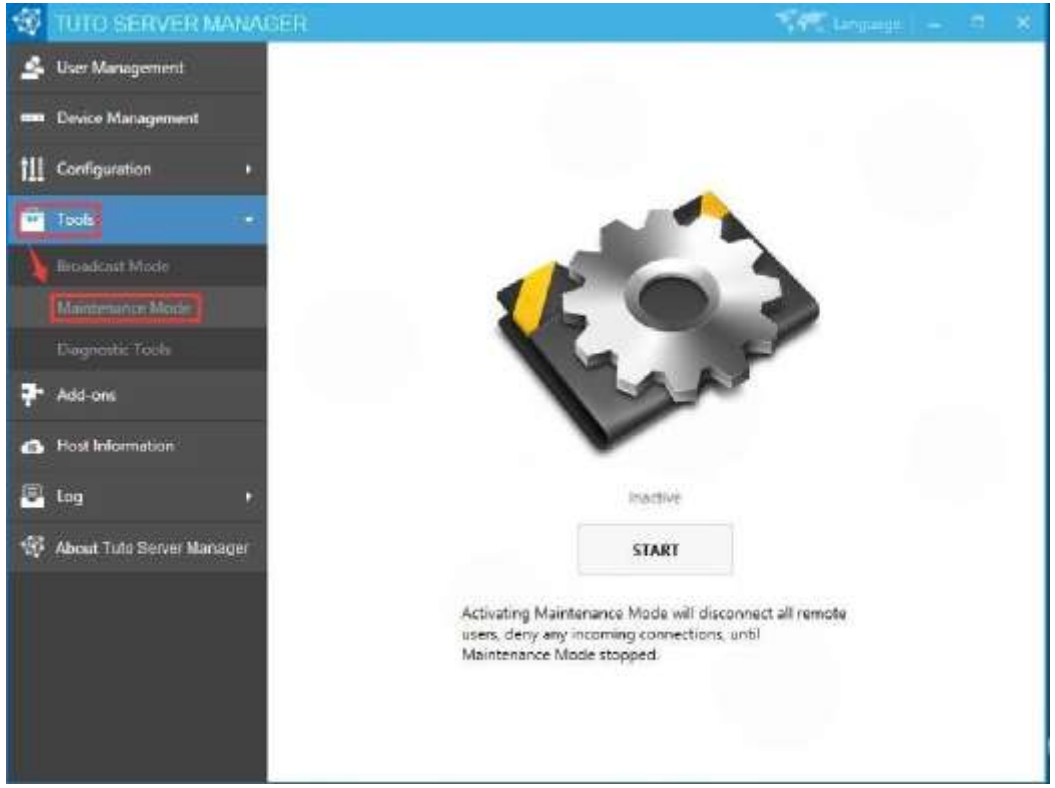
Storage Visibility



Monitor Authorization

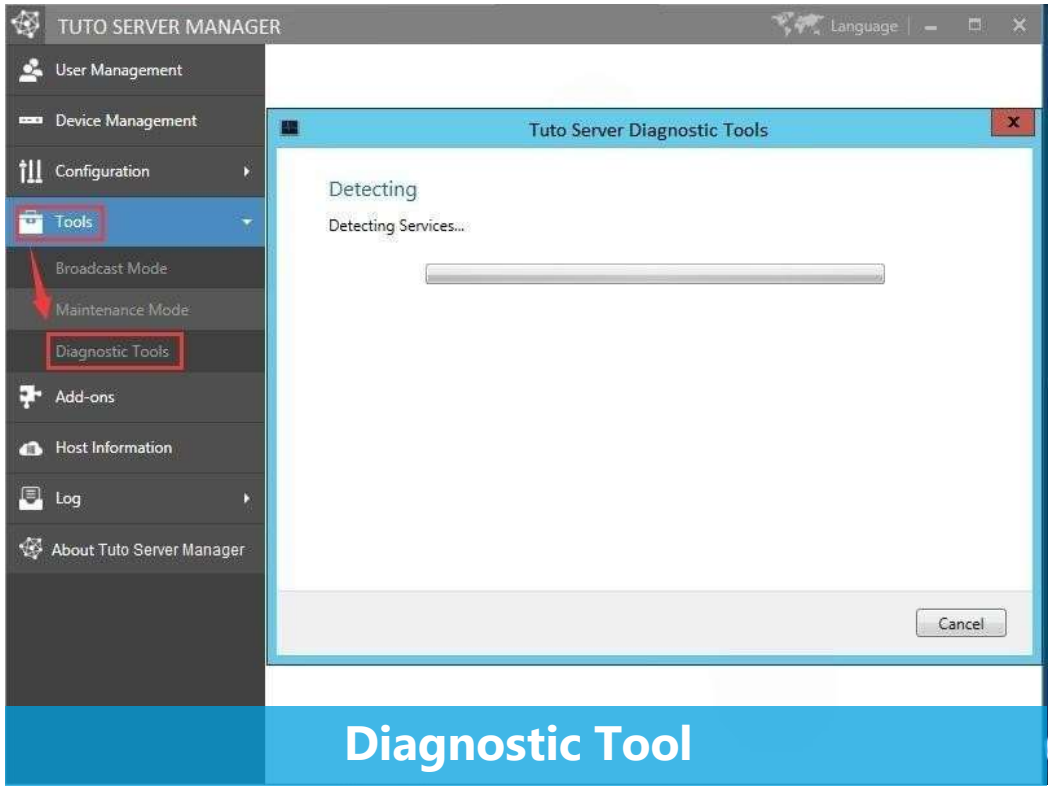
Software Interface (5)

Tutto Server Manager console

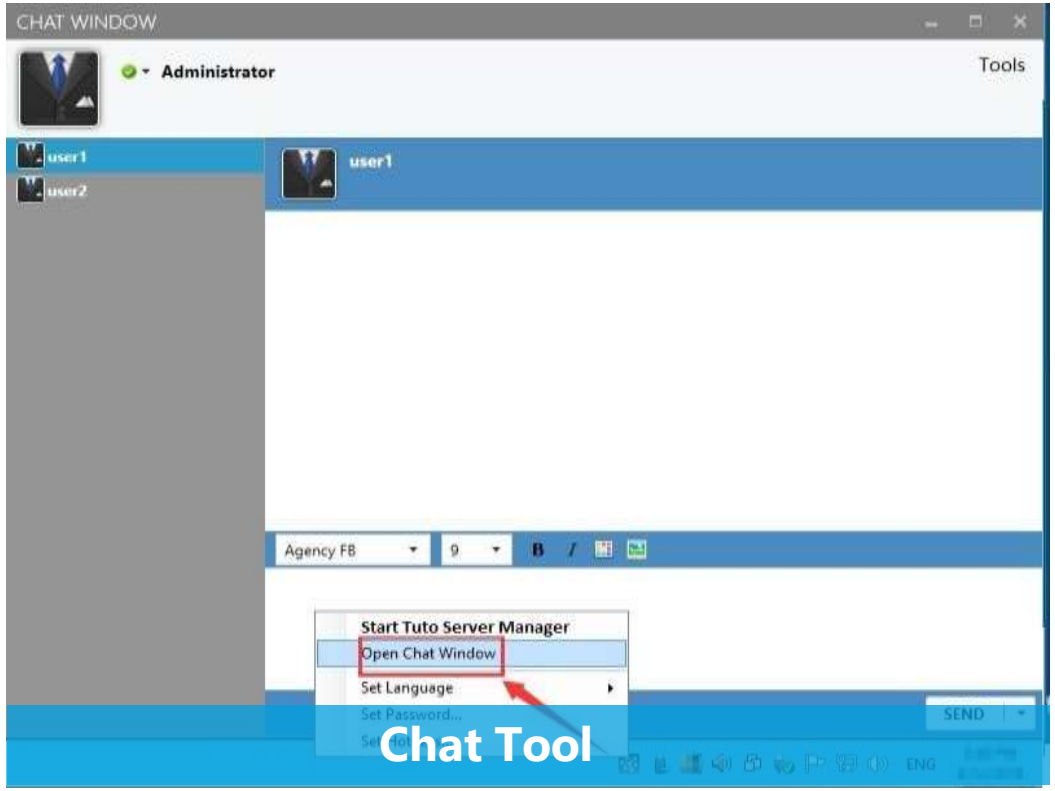


Software Interface (6)

Tutto Server Manager console



Diagnostic Tool



Chat Tool

Installation Process

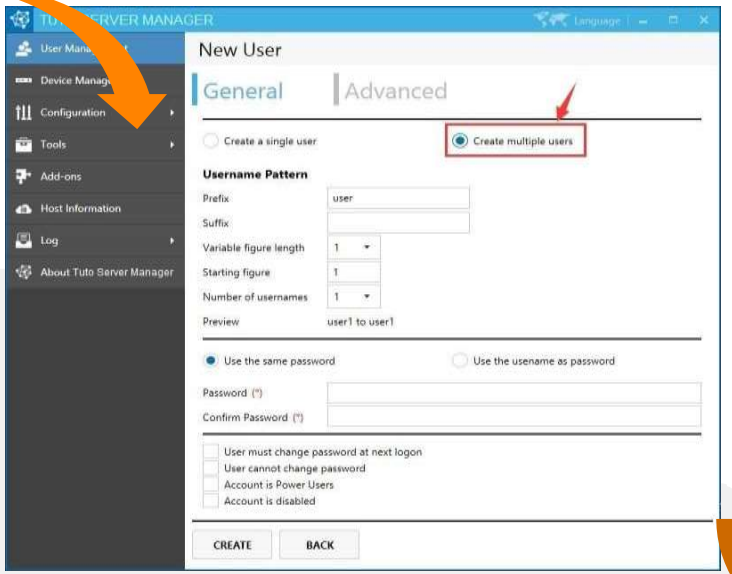
Getting it ready is easy as 123!

01 Step One

Install Tutto Server Management Software

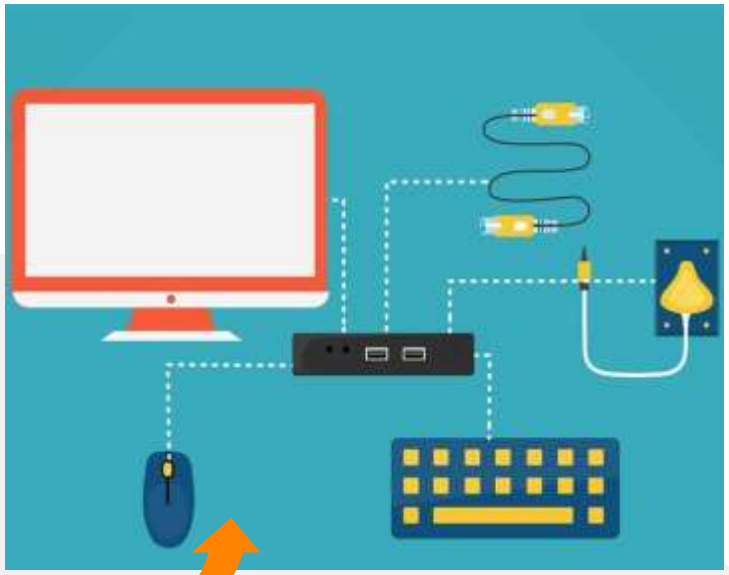
02 Step Two

Create User Accounts



03 Step Three

Connect to Start



SCENARIOS

Scenarios that are best suitable, not suggested or test needed.

Most Suitable Scenarios

Where unified desktops and common applications are used

For Most Ordinary Users:

Most task and knowlege users including students or trainees in schools or training centers, office teachers or staff, production workers in factories and visiting guests in public areas such as libraries, govenment affairs centers, hospitality business centers, community internet centers, kiosks, etc.

Reasons:

1, Running only the common 2D productive or multi media applications like Office, browser, email, instant messenger, music, video, etc, which are supposed to be compatible.

2, Sharing Computing is just right for those who are looking for centralized management and unified desktops of either persistent or non-persistent.

Not Recommened Scenarios

Where powerful or standalone PCs are required

For A Few Typical Users:

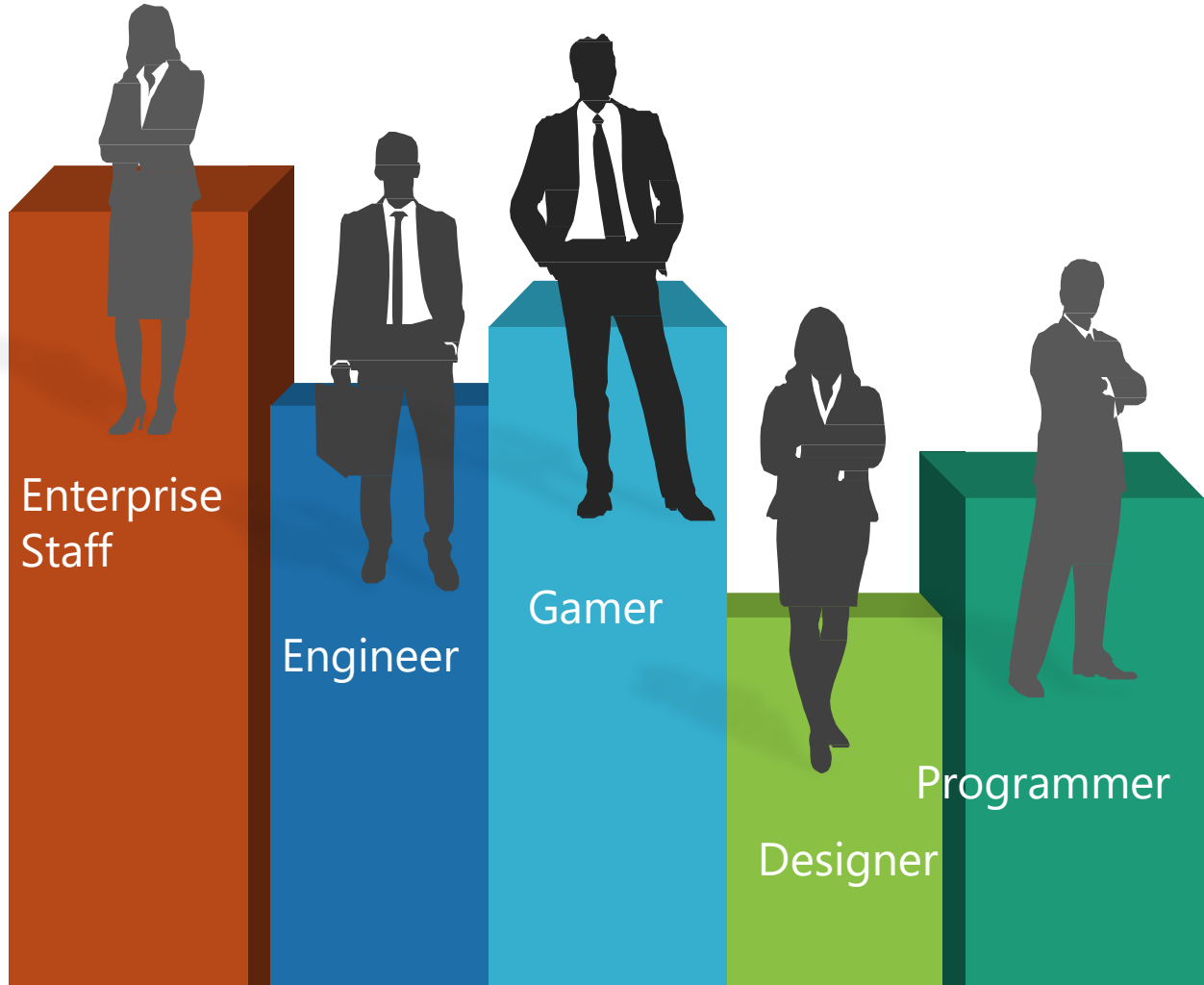
A few power and advanced users including designers, engineers, and gamers who requires powerful PCs for 3D graphics rendering, progrommers who run Linux systems, and office workers in some departments or large enterprises who require much personalization or need to run applications or under a private network that are known not supporting remote desktop or multi-user environment.

Reasons:

1, 3D rendering on a decret graphic card and personization or customization are not supported by remote desktops.

2, VPNs and a few applications are not suppoted in a multi-user environment.

3, Linux systems and dual monitor use are not supported by vMatrix and the zero clients.



Test Needed Scenarios

Where some typical peripheral devices or applications are key tools

For Some Service Employees:

Some service employees like supermarket or retail store cashiers, bank tellers, call center operators whose job totally relies on the use of some typical peripheral devices and CRM application.

Reasons:

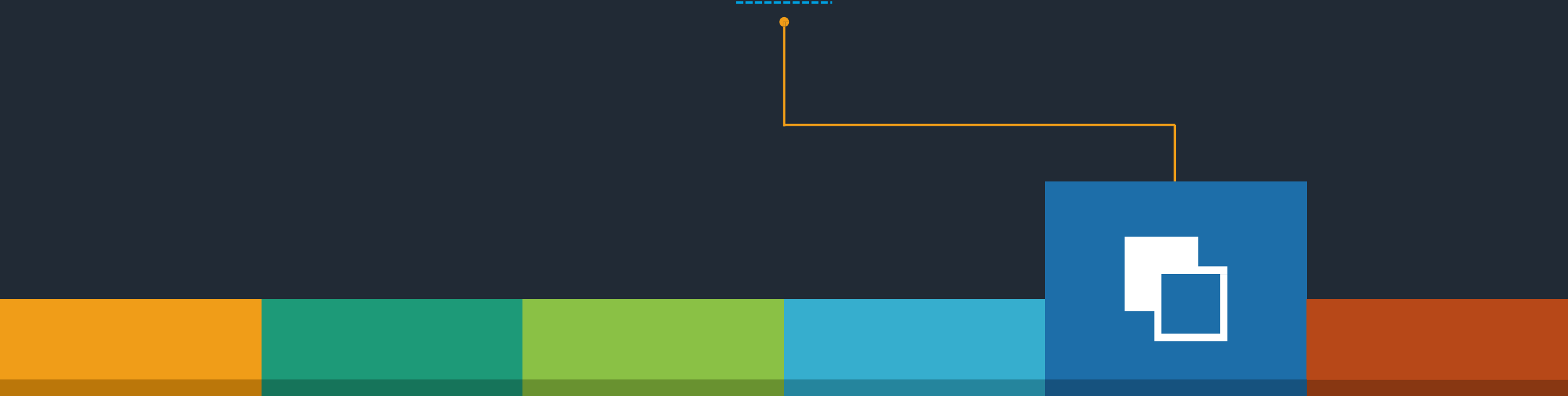
1, Some device models are different than others when produced and may not work properly with zero clients, even though devices of the same brand or same category have already been tested working well.

2, The way CRM applications work varies. Some CRM applications work well in the multi-user environment while some does not.

3, Service businesses often requires fast, reliable access to information. While Sharing Computing is known to be one down, all down, an additional backup host is then needed in case of primary host faliure.

COMPARISONS

TuttoCloud vs. Competitive products in the market



TuttoCloud vs. Mini PCs(1)

Key Comparison: Served Based Computing vs. Traditional PCs

	 TuttoCloud	 Mini PCs
Hardware Cost	Cost-effective, half the cost of an entry level PC.	Varies according to the configuration; most models are cheap but less powerful.
Software & License	All users share 1 set of system& software; RDS CALs for each client are much less cost.	Each device uses its own set of system& software and needs full standard licenses.
Power Consumption	Less than 5W.	Consume little power, ranging from 5W to 20W.
Noise & Heat	Fanless, no noise and much little heat even when running for days.	Since they process with local components, they are either cool but noisy if fanned or noiseless but hot if without fans when running for hours,
Life Span	Up to 10 year refresh cycle, and lack of moving parts improves life spans in harsh environments.	Supposed to be 5-7 years, and better fit in harsh environments when compared to full sized PCs.

TuttoCloud vs. Mini PCs(2)

Key Comparison: Served Based Computing vs. Traditional PCs

	 TuttoCloud	 Mini PCs
Desktop Performance	Same good as the host if provided well configured host and reliable local network.	Varies widely; some devices are cheap just because they use low end components.
Future Expansion	Zero clients are obsolescence-free; simply upgrade the host.	Limited hardware choice; no room for growth or expansion; need to replace the entire device.
Desktop Problems	With no local software, desktop related problems like virus infection are eliminated.	Like PCs, Mini PCs have desktop problems since they have their independent OS & software.
Patches & Updates	All installations, patches & updates are done on a single host; nothing at the endpoints.	Installations, patches & updates are done on each individual mini PCs.
Hardware Maintenance	With no failure -prone moving parts, repairs on the zero clients are rare。	Less maintenance than full sized PCs but still have breakable parts.

TuttoCloud vs. Mini PCs(3)

Served Based Computing vs. Independent PCs

	 TuttoCloud	 Mini PCs
Remote Support	IT staff can provide support or from their desks through monitoring and controlling over user desktops	IT staff need to travel to user locations to fix problems.
Deployment Timeline	Connect peripherals to start; a new workstation can be set up in seconds.	One hour or more time for installations of each independent seat's OS and software.
File Sharing	Share files easily on public disks without the need to copy or transfer between desktops	Copy or transfer shared files between desktops.
Desktop Roaming	With a simple log-off and then log-in from any zero client, the user's back at his desktop.	Waste time in moving devices and waiting for system reboot when changing a workspace.
Management Functionality	Powerful management software to manage users & devices centrally and remotely from host.	Hardware sold only, no management functionality.

TuttoCloud vs. Mini PCs

Conclusion: Mini PCs are all about size, nothing else better than a full sized PC.

Advantages：

As each mini PC works independently, there is no compatibility problems of applications or peripherals.

Risks:

01

Cost & Performance

Customers sometimes mistakenly think the cost of mini PCs are lower than full-sized PCs. But If you carefully study the configurations, you will find mini PCs actually are more expensive than full-sized PCs of the same performance.

02

PC Problems

Since mini pcs comprise the exact hardware and software structure as full sized PCs, mini PCs have all the other defects that the full sized PCs have, such as hardware maintenance, software updates & patches, virus-infections and so on.

03

Manageability

Mini PCs serve as a type of personal computers. The devices alone do not provide any management functionality that facilitates IT administration for organizations.

TuttoCLoud vs. Diskless Nodes (1)

Key Comparison: Centralized Computing vs. Centralized Storage

	 TuttoCloud	 Diskless Nodes
Hardware Cost	Cost-effective, half the cost of an entry level PC.	Diskless nodes are typically ordinary PCs with no hard drives supplied; cost saving is just in the cost of storage.
Software License	Tutto Server Manager software is free of charge.	Customers shall pay for the management software.
Power Consumption	Less than 5W.	About 200W.
Noise & Heat	Fanless, no noise and much little heat even when running for days.	Less noise & heat than PCs but more than zero clients since processing is done locally.
Boot Time	A desktop can be ready in a few seconds.	OS image loading and preparation of the desktop often takes a few minutes.

TuttoCloud vs. Diskless Nodes (2)

Key Comparison: Centralized Computing vs. Centralized Storage

	 TuttoCloud	 Diskless Nodes
Scalability	Use a unified architecture and protocol, the back-end server brands and models are not required.	Requires consistent front-end hardware model and configuration, poor scalability
Hardware Repairs	With no failure -prone moving parts, repairs on the zero clients are rare.	Have breakable parts that repairs and fixes are often needed.
Future Proofing	Remain useful for the entirety of their replacement cycle of 7-10 years and may just use more powerful hosts in the future for upgrade.	Only 3-5 years lifespan and may in future need a server upgrade, a client upgrade, or both.
Maintenance	Maintenance is left to the only system updates & patches on a single host.	Complex to maintain the diskless management system and images OS updates.
Network Requirement	Transmitting only mouse, keyboard and display changes greatly reduce the network bandwidth.	Very high network bandwidth requirement for large data transmissions between clients and servers; and easy to cause boot time network storm;

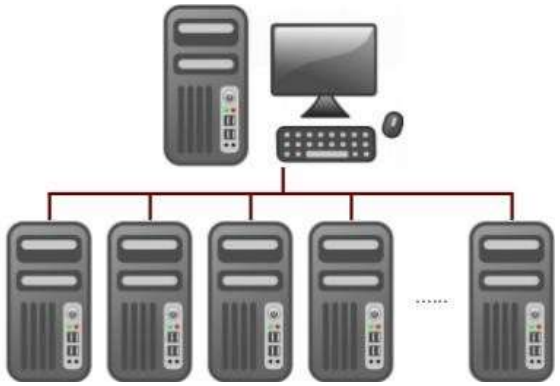
TuttoCloud vs. Diskless Nodes (3)

Key Comparison: Centralized Computing vs. Centralized Storage

	 TuttoCloud	 Diskless Nodes
Deployment Timeline	One touch software installation, no configurations, Connect to start devices; provisioning for a new user can be done in seconds.	Complex and time-consuming for installing & configuring software on the host, preparing OS images and connecting diskless nodes;
Remote Support	IT staff can provide support from their desk through monitoring and controlling over user desktops	IT staff need to travel to user locations to fix problems.
Desktop Roaming	With a simple log-off and then log-in from any zero client, the user's back at his desktop.	Waste time in moving devices and waiting for system reboot when changing a workspace.
Security	Processing on host frees the worry of data loss from power or network interruption. IT staff can lock down USB peripherals to prevent copying confidential data leaking.	User data may be stolen by network hacking to RAM cache or copied to removable storage. Unexpected power or network interruption may also cause use data loss.
Reliability	Powerful management software to manage users & devices centrally and remotely from host.	Performance declines greatly on large user density; heavy data transmission plus the complex management system increase risks and fragility of the deployment.

TuttoCloud vs. Diskless Nodes

Conclusion: Diskless Nodes are PCs but centralized storage.



Advantages：

The usual large variety of peripherals can be added and rich multimedia applications like video gaming are supported if bandwidth is fully served and hardware specifications are suitable.

Risks:

01

Cost

Diskless nodes are typically ordinary PCs with no hard drives supplied. As the processing load is potentially as high as PCs, other hardware with high specification are required when purchasing. Plus the added hardware on hosts and the diskless system management software license, cost savings on using diskless nodes may be smaller than they first appear.

02

Complexity

Diskless system is so complex that very high skill levels for IT staff are typically required for deployment and maintenance. Complex OS image management and image backup overhead and causing delays in provisioning new users.

03

Reliability

Performance of clients may decline greatly on large user density; heavy data transmission plus the complex architecture increase the complexity and fragility of the deployment and drive up ongoing support costs.

TuttoCloud vs. Thin Clients

Key Comparison: Zero Clients vs. Thin Clients

	 TuttoCloud	 Thin Clients
Purchase Cost	Cost-effective, half the cost of an entry level PC.	As much as PCs since they typically include all PC components.
Power Consumption	Less than 5W.	Consume an average of 15-30 Watts
Deployment Timeline	Connect peripherals to start; a new workstation can be set up in seconds.	Complex OS image management and image backup overhead, causing delays in provisioning new users
Peripherals Support	Peripherals never require specialized client drivers to work – just a native Windows driver is required.	Requires customized client drivers, driving up deployment timelines and ongoing support costs.
Management & Security	Zero endpoint management or configuration, saving IT staff time and improving system resilience & reliability.	Thin client OS has to be patched, managed, and even protected from malware or viruses.

TuttoCloud vs. Thin Clients

Conclusion: thin clients are not “thin”, but complex.

Advantages：

Thin Clients usually contain multiple connection brokers, such as VMware Horizon, Citrix XenDesktop, and Microsoft RDP to name a few. This provides some flexibility.

Risks:

01

Cost

A thin client typically includes a CPU, graphics coprocessor, memory, and local storage like a hard drive, solid-state drive, or simply flash memory. Thin client vendors often offer a wide range of models comparable to PCs in capabilities and prices.

02

Complexity

Thin clients on the market today require other products to create a complete end-to-end solution. Very high skill levels for IT staff are typically required for deployment and maintenance, which can add significant training, staffing levels, or outsourcing costs.

03

Maintenance

No matter how thin a client is, at minimum it requires hardware of a CPU, memory and local storage and software of an operating system, drivers. It means something has to be managed at both ends, the server and endpoints; as well as a management system to manage the O/S and drivers.

TuttoCloud vs. VDI Zero Clients

Key Comparison: RDS vs. VDI

	 TuttoCloud	 VDI Zero Clients
Hardware Cost	TuttoCloud CR-101 is half the cost of entry level PCs. Less CPU and memory resources of the host are utilized, which facilitates having more users per system.	VDI zero clients are often priced over 300 USD for using typical compression processors and high end server side infrastructure is required for running multiple VMs.
Software Cost	Tutto Server Manager is free of charge. All users share a set of OS and applications, reducing licensing cost.	The various VDI software may cost over hardware. And standard Windows OS and applications licenses are also required for each user.
Recurring Cost	Software vendors charge significant recurring maintenance fees for access to upgrades or patches, further increasing operating costs.	Software vendors charge significant recurring maintenance fees for access to upgrades or patches, and expensive Windows VDA license shall be paid annually.
Technical Support	Extremely simple, any one can use and manage; no typical training is required.	Very high skill levels for IT staff are typically required for deployment and maintenance, which can add significant training, staffing levels, or outsourcing costs.
Ongoing Management	All installation, updates and patches can be easily done on a single shared host.	IT staff has to manage multiple instances of the OS, updating and patching them. At the same time, virtualization software needs to be managed as well.

TuttoCloud vs. VDI Zero Clients

Conclusion: The cost and complexity of the VDI environment is a concern

Advantages：

VDI tends to be a less susceptible to application compatibility issues and allows the user to work in a familiar desktop OS.

Risks:

01

Cost

Customers must take on the integration of client hardware with management tools, connection brokers, and VDI protocols from multiple vendors. The initial costs for client devices & high end servers, comprehensive licenses for VDI software, and Windows OS & applications, and ongoing costs of recurring VDI software maintenance fees, annual Windows VDA and salary for skilled IT staff may add up to 5-6 times as that of using individual PCs.

02

Complexity

Very high skill levels for IT staff are typically required for deployment and maintenance. Significant training is required for IT staff to manage and users to use. Deployments with mixtures of offerings from different vendors can greatly increase the risks and fragility of the deployment and complicate help desk support and troubleshooting.

03

Management

The fact that each user gets a separate VM creates complexity for the IT staff, wherein it has to manage multiple instances of the OS, updating and patching them. At the same time, virtualization software needs to be managed as well.

TuttoCloud vs. RDP Zero Clients

Key Comparison: Powerful zero clients vs. Incomplete zero clients

	 TuttoCloud	 RDP Zero Clients
Video Support	Supports smooth and HD videos in any supported resolutions, supports all formats, and very resources efficient for more user density on a host.	HD videos are not supported in high resolutions. Less use density on a host. Some formats are not supported.
Audio Support	1/5 latency to RDP zero clients, high quality, play and record in any supported systems.	High latency, indistinct sound quality, cannot record in some Windows systems.
USB Support	More compatible peripherals, no client driver is required, devices are isolated, no restrictions, work as in PCs.	Few compatible peripherals, required client driver, works only in a few OS only, have problems like memory device visibility, and multiple printer copies and so on.
Manageability	Powerful management software to manage users & devices centrally and remotely from host.	Little management with Multipoint OS. And some vendors provides software with very simple management functions.
Additional Features	Includes tools and features like desktop broadcast, internal chat tool, client rendering, user isolation, etc.	RDP is open for public use but technology is not open. The vendor cannot do in-depth development to provide premium features.

TuttoCloud vs. RDP Zero Clients

Conclusion: RDP zero clients slash capital hardware cost at the price of decrease performance.

Advantages：

No software is required to install on the host; compatible with other devices using RDP.

Risks:

01 Performance

RDP was not originally designed to deliver a full Windows desktop experience. Even with the later RemoteFX or other RDP enhancement technologies, which represent an attempt to extend the prior RDP technology for multimedia support, customers still face performance issues or limitations in their actual implementations, most significantly on the support of video, audio, and USB peripherals.

02 Manageability

Most RDP zero clients are sold without any management software but simply used as a PC-replacement to reduce hardware purchase cost. Some vendors do provide some management software but with very simple device management functions that is more a tool than real management software.

03 Usability & Reliability

Customers often have to do some configurations before the Windows desktop is successfully delivered to the RDP zero clients, such as allowing remote desktop connection, adding users to remote users group and enabling RemoteFX and other more. And to enable the use of audio and USB devices on zero clients, you have to also configure USB & audio redirection. These configurations may work in some settings but not all. Various unexpected problems may happen any time. The compromise of usability and reliability can greatly add up to help desk support and troubleshooting, and may also drive up ongoing support costs.

TuttoCloud vs. NC L350 with vSpace Pro

Key Comparison: Perfect solution vs. Disabled solution

	 TuttoCloud	 NC L350 with vSpace Pro
Smoothness	30fps desktop refreshment, as smooth as running on real PCs.	15fps desktop refreshment, obvious delay on simple operations like refreshing desktop , dragging a window, scrolling down webpages or launching applications.
Display Quality	32 bits true color depth with no compromise as viewed in physical PCs.	The color depth is claimed to be 24 bits, but 16 bits actually; significant color distortion and detail loss.
Video Support	Smooth and real full HD (up to 1080p) video play with synchronized audio; high user density.	Not support real HD videos; when watching videos, customers will see blur image, obvious frames skipped, color misplaced, ghosting, sound delay and other issues.
Audio Support	As low as 0.1-0.2 sec latency, 16 bits 44.1/48 Khz CD level quality, reliable input and output, fully synchronized.	Low and noisy; 8 bits, bad quality. Not synchronized in some circumstances.
Usability & Reliability	No configurations; user-friendly interfaces to use and manage; reliable, there are intelligible Instructions and diagnostic tool to help fix issues quickly.	Interface is improved with the pro version but still a few configurations are needed; often have unexpected issues; but no instructions or guides to help trouble shooting.

TuttoCloud vs. NC L350 with vSpace Pro

Key Comparison: Perfect solution vs. Disabled solution

	 TuttoCloud	 NC L350 with vSpace Pro
User Isolation	User isolation technology allows the admin to configure visibility of host storage to users and also isolate users to access their personal files & USB devices only.	No storage visibility control that files on the host are accessible to all users.
Session Customization	Tutto Server Manager allows the admin to tailor sessions individually to meet their personal needs.	vSpace provides little customizable settings and does not allow individual session customization; any changes done on the host are effective to all users sessions.
Client Rendering	Client rendering enables media content to be rendered locally by the client processor to significantly offload host-side CPU consumption and increase user density.	No such feature.
Internal Messenger	Internal Messenger is chat tool included in tMatrix for free; it allows internal communication among all users.	Expected to come with some future version of vSpace Pro but charged additional.
Desktop Broadcast	This feature allows the admin to show the host desktop to terminal users, facilitating demonstration or tuition.	Expected to come with some future version of vSpace Pro but charged additional.

TuttoCloud vs. NC L350 with vSpace Pro

Conclusion: NC L series with tSpace retrofit RDP technologies but make little progress.

Advantages：

vSpace allows server groups management which is not yet ready but expected to come with vMatrix 3.0.

Risks:

01 User Experience

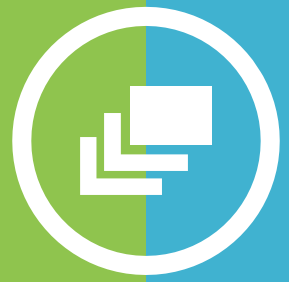
NComputing UXP is typically an RDP extension that represents an attempt to retrofit the RDP technology to deliver a multi-media supported desktop experience. Its lossy compression algorithm on data transmission is not that efficient as DDP or even RemoteFX but largely sacrifices the media quality (text, images & sound) so as to reduce transmission workload and resources consumption, delivering a smoothness-improved desktop but compromising user experience.

02 Manageability & Features

vSpace provides simple & general management functionality only. It doesn't provide options to customize individual sessions settings, but only global settings that are effective to all, neither does it provide any advanced features such as client rendering, user isolation or diagnostic tool to enhance users experience or facilitate technical support.

03 Usability & Reliability

Although user interface is improved since the release of vSpace pro version but there is still a few configurations to be done before using their devices, such as allowing remote desktop connection, creating users and adding them to remote users group. The device connection and software settings are not reliable. When using the devices or managing with vSpace, various unexpected problems may happen any time and there are no instructions or guides to help support staff trouble shooting problems. The compromise of usability and reliability can greatly add up to help desk support and troubleshooting, and may also drive up ongoing support costs.



Your Questions?

Feel free to ask any questions about TuttoCloud company, products, technologies, sales, support & services.

TOLL FREE 800 888 666

Get in Touch

www.tuttonica.com | order@tuttonica.com

Office M10A, AL AIN Centre, Dubai, UAE
Mob:+971-58-525-6789
Tel: +971-04-359-7866

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TUTTONICA

Beyond Limits...

Welcome to see real demonstration
From Chase Distributions

TuttoCloud specializes in providing innovative computing solutions to improve organizations' business/ service value, helping our customers realize the highest ROI of computing spendings by shifting the traditional personal computer infrastructure to a new centralized model. We provide proven computing solutions to help customers reduce costs, enhance security and boost productivity so they can concentrate more on their business or service. Our technologies make desktop computing extremely simple and affordable. Due to the superb flexibility and simplicity of our zero client, customers can easily deploy, use and manage desktops for dozens to hundreds of users at a fraction of costs.