

Paragon II Platform

Release 4.3

September 6, 2007

Document Revision History

Original Document Release:	August 15, 2007
Revisions:	<ol style="list-style-type: none"> 1. August 29, 2007 <ul style="list-style-type: none"> – Updated the P2-UMT firmware version. Note: if you installed version 3E9, please update to version 3EA. An issue was discovered in 3E9 that affected support of the Autoskew feature. – Updated the P2CIM-AUSB-C firmware version from 1A1 to 1A2. If you have received CIM version 1A1, you <u>do not</u> need to upgrade to 1A2. The newer version provides a minor fix update.
	<ol style="list-style-type: none"> 2. September 6, 2007 <ul style="list-style-type: none"> – Removed issue #9031 from the list of maintenance fixes.

Related Documents:

Paragon II 4.3 User Guide
Paragon II 4.3 Quick Start Guide
Paragon II 4.3 Compatibility Matrix

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Release 4.3 New Deliverables and Versions

Effective:	Immediately
Applicability:	<ul style="list-style-type: none"> • Paragon II models: UMT 242, UMT 442, UMT 832M, UMT 832S, UMT 1664M and UMT 1664S models may be upgraded with Beta release 4.3. • Paragon II firmware is supported on Paragon I models UMT242, UMT442, UMT832 and UMT1664 switches and user stations that are hardware version III.
Deliverables:	<p>Version 4.3 includes the following updates (Component/Version):</p> <ul style="list-style-type: none"> ○ P2-UMT: 3EA ○ Paragon Update: 2.4.5.0.1 ○ P2CIM-APS2DUAL 2A4 ○ P2-HUBPAC: 0C8 <p>Version 4.3 includes the following new products (Component/Version):</p> <ul style="list-style-type: none"> ○ P2-EUST/C: 4E4 ○ P2-EUST/C-GOV: 4E4 ○ P2CIM-AUSB-C: 1A2 ○ P2CIM-AUSB-C-GOV 1A2 <p>Updated User Documentation (Document/Version):</p> <ul style="list-style-type: none"> ○ Paragon II User Guide: P2-0M-E ○ Paragon II Quick Start Guide: P2-0H-E <p>Note: the following UMT boot loaders were introduced in Release 4.2 and are required for installation of 4.3 on the Paragon II UMT:</p> <ul style="list-style-type: none"> ○ M Loader: 0C4 ○ S Loader: 0C5

New Features Overview

New Feature: Integrated Smart Card/CAC Reader



Paragon II Release 4.3 introduces an integrated smart card reader into the Paragon platform, enabling smart card authentication and enhancing KVM system security for both the private sector and government agencies. The card reader is built into a new Paragon II Enhanced User Station (model numbers P2-EUST/C and P2-EUST/C-GOV), providing users with the convenience of utilizing smart cards from their KVM workstation. The card reader solution

supports the use of smart cards as well as Common Access Cards (CAC) when accessing servers and PCs running Windows 2000, 2003, NT, Vista and XP.

With the new card reader, Paragon II enables the United States Department of Defense and their affiliated agencies to easily comply with HSPD-12, maintaining high security during convenient KVM access of servers. Private sector customers who may also be implementing the use of smart cards will also benefit from this complete solution to safeguard their IT and business assets against identity theft, system hacks, and internal fraud.

Deploying the Card Reader Solution

The solution is easy to deploy. With the exception of the driver installation, the solution is “plug & play”. *There is no difference in the installation or configuration of the system.* Existing Paragon II customers (or Paragon I, hardware version 3 customers) who wish to implement the new card reader solution simply need to replace their existing user stations with the new card reader-enabled user stations (P2-EUST/C or P2-EUST/C-GOV). Note that the Paragon II user station does not connect to an authentication server or to a network.

In addition to the new user station, new Computer Interface Modules (P2CIM-AUSB-C or P2CIM-AUSB-C-GOV) are also required for use with the card reader. The new CIM is to be connected to each server that requires smart card/CAC authentication. The new CIM includes a red USB connector for easy identification.

Lastly, existing customers also need to implement a firmware upgrade of their system's Paragon II UMT switch to release 4.3. **The card reader is not compatible with pre-4.3 versions of Paragon II.** Paragon I/HW version III systems may also be upgraded.

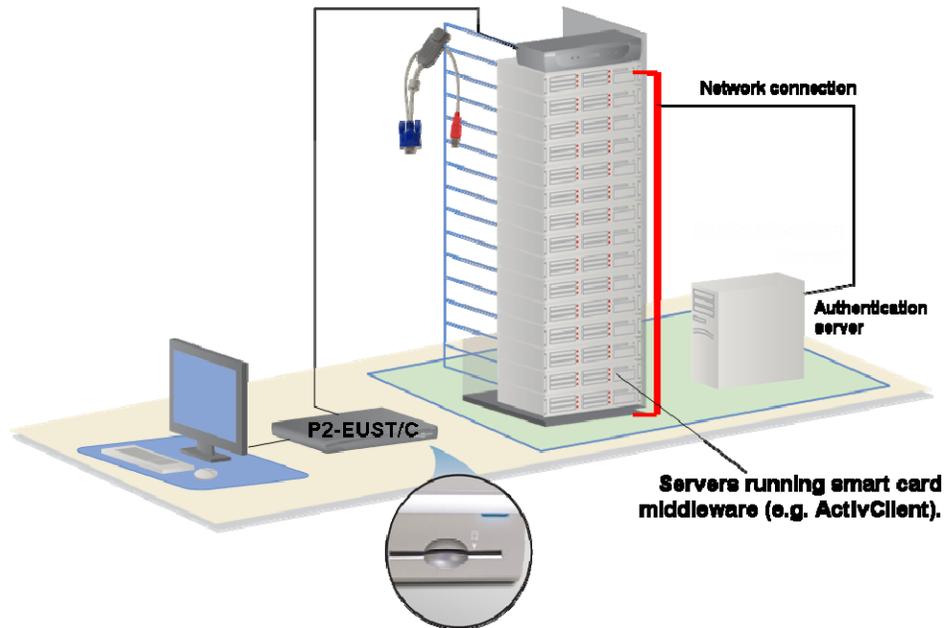
A **driver for the card reader must be installed** on each target server that is connected to the new CIM. The driver, filename `usbccid.sys`, is a common card reader driver that is included with Windows. **To ensure driver compatibility**, please utilize a driver that has been tested fully with Paragon II, and is provided with the current Paragon II software download at <http://www.raritan.com/support/firmwareupgrades/paragonII>. **Do not use the driver provided by SCM Microsystems.**

The P2-EUST/C provides the same functionality as the P2-EUST, with the addition of an integrated smart card reader (exception: does not provide PS/2 ports for keyboard and mouse; USB only). The P2-EUST/C is compatible with all Paragon II CIMs, which allows users to access servers with or without smart card requirements from the same user station.

The card reader may be used in configurations with stacked Paragon II units, as well as tiered (or cascaded) switches.

In addition to the required Paragon II components, the typical configuration includes the following items running in the customer's environment (not provided by Raritan):

- Middleware running on the target servers that interfaces with the card reader and provides information for authentication (e.g. ActivClient).
- Authentication server, e.g. Windows domain server.



How It Works

The manner in which Paragon II is used has not changed. The card reader is not used to access the Paragon system itself. To access a server, a user selects the server in the Paragon menu. When selecting a server that requires smart card authentication, the user will be prompted by the server to insert their card (if it is not inserted already).

If the authentication client software has been configured properly, a message prompting the user to insert the card is displayed. When the card is inserted, the LED on the front of the user station will change from blue to green. As the card information is read and transmitted to the server, the green LED will flash quickly. The LED will stop flashing when no longer being read.

In the typical server configuration, the user will be prompted for a password or PIN after the card is inserted. Upon entering this information, the LED will flash again and authentication will be granted if the user's credentials match those that are expected by the authentication server.

To access a different server, the user simply returns to the Paragon II menu.

When the user leaves a channel, they lose their authentication to that server.

When the user accesses a different server, they must authenticate again – including when they return to a server they've already accessed (i.e., the card is automatically re-read).

The smart card may be left in the reader when accessing a new server. The card is automatically read as needed.

If the server is configured as such, access to the server will be cut off if the card is removed.

Feature Notes:

- Paragon II does not connect to the authentication server. The reader simply provides the card data to the target server through the Paragon analog pathway. The Paragon II user station does not connect to the LAN.
- **The smart card data is not stored or cached!**
- Once P2-EUST/C is installed, in order to protect the card data and to disallow unauthorized access by other users, the whole system (including the base unit and its tiers) automatically enters Private Mode, regardless of the original operation mode setting.
- Due to the nature of the card reader feature, the Scan/Skip function is disabled for the user when a card is inserted.
- **While the card reader is transmitting data and communicating with the server, the user cannot switch to a different target.**
- Paragon II does not support writing data to a smart card. Raritan recommends connecting a 3rd party external reader directly to a PC for the purpose of modifying a card's data.
- While not a typical scenario, the new P2CIM-AUSB-C is compatible with non-card reader user stations (P2-EUST and P2-UST).

For further details on the use of a smart card or CAC with the Paragon II system, please refer to the updated Paragon II User Guide.

System Notes and Limitations

I. Smart Card Reader Notes

- The card reader is compatible with Microsoft Windows only as of this release. Solaris support is planned for later in 2007/early 2008.
- The Paragon II integrated smart card is not supported for use with:
 - IBM BladeCenter
 - P2-HubPac
- External smart card readers are not supported as of release 4.3.
- P2-EUST/C supports only USB keyboard and mouse. The use of PS/2-to-USB converters is not supported.
- Regarding the **Video Redirect and Multiple Video features**, if the card reader is transmitting data, the forced switch will fail, as switching away from the target server is not possible while the card reader is actively transmitting.

II. General Notes

- Releases 4.2 and 4.3 are “standalone” releases, i.e. not compatible with the Paragon II System Controller (P2-SC) and is not supported for installation in a Raritan PCCI environment. PCCI integration is planned for a future release.
- IBM BladeCenter Support
 - Need to configure and refresh servers manually through the Paragon OSD
 - Once CIM is connected to the BladeCenter chassis. CIMs are not connected to the individual servers. As result, one user at a time may access the servers running in a BladeCenter chassis.
- Enhanced Video Redirect (Forced Video)
 - Not supported for use with the UST/IP remote port
- Multiple Video
 - Not supported for use with P2-HUBPAC, Dual CIMs, P2-ZCIMs, Dual CIMs, Blade CIMs, or X-330 CIMs
- Support of CORTRON keyboards
 - Not supported for use with P2-UST, UST1 or UST/IP remote port
- Support of Kensington mouse products:
 - Requires use of P2-EUST user station
 - Not supported for use with P2-HUBPAC
 - Direct-Connect Mode not supported

- Due to potential blocking issues, the Double Diamond configuration is not supported by Raritan if the configuration includes UMT Stacking units or P2-HubPac. It is highly recommended to avoid using a Double Diamond configuration in general, and especially when using Paragon II stacking units or the P2-HubPac (Raritan Issues 4722, 4723, 4724). No action planned at this time.
- Raritan Issue #7207: Occasional errors when downloading the database via Paragon Manager.
- Raritan Issue #4858/8101: Reported instances of “stuck shift key” behavior; when clicking the mouse, multiple icons were selected. No action planned at this time. Workaround: The problem involves the keyboard losing responsiveness when using Paragon. The problem is very random but if it occurs, users should press the LEFT SIDE CTRL, ALT, SHIFT keys and then the RIGHT SIDE CTRL, ALT, SHIFT keys. The keys should be pressed one at a time.
- Video failure issues have been reported occasionally when connecting to IBM RS/6000 43P Model140.
- When using Paragon II Z-CIMs, it is recommended that they are **deployed in static environments**, and the following steps be considered:
 - P2ZCIMs are not supported in Paragon II Systems Controller and CommandCenter Secure Gateway configurations.
 - Ensure that the latest compatible firmware for P2ZCIMs and corresponding Paragon system is being used
 - When the P2ZCIM target is powered off, the OSD status may take from 20 to 30 seconds to update for long chains (24). Shorter chains (10) the status updates in less than 10 seconds.
 - If the master is the last P2ZCIM to be powered OFF, the OSD will keep the active (Green) status for the target. If customers do a methodological power down they should be aware that they are leaving the last P2ZCIM as the master.
 - The Master P2ZCIM can be detected if the LED is blinking on and off, but at a regulated, moderate speed (i.e., every half second).
 - If the P2ZCIM is physically connected to the Paragon UMT and the target is powered off (or not connected to a target), the OSD will show the P2ZCIM as a tiered device (Purple). The user won't be able to switch into the device which is proper functionality.
 - When a user is connected to a non-master target on a P2ZCIM chain they will be disconnected when the power is lost to the Master ZCIM. Again, if users are aware of what P2ZCIM is the master this situation can be prevented.
 - The Resize command used to set the P2ZCIM chain size and to optimize the database memory in Paragon systems is not supported in this release.
 - When P2ZCIMs are used, at least one out of 20 P2ZCIMs needs to be powered.

- Pinnacle keyboard support with P2-HUBPAC – Supports all keys and function (LED) keys. Pinnacle provides a LCD that may miss characters from time to time when used with P2-HubPac; it is recommended that the user refer to their PC screen which also displays the characters correctly.
- P2-HUBPAC upgrades must be performed at the factory.
- For users of Sun equipment, especially Sun keyboards connected to Paragon with P2CIM-USBG2, P2CIM-AUSB, P2ZCIM-USB CIMs connected to the target machine the following will occur: When a key is depressed and held to initiate character repeats, the repeating will stop after about 2 seconds. To continue the key repeat, simply release the key and depress it again. Repeat this procedure until the desired repeat length is reached.
- If a user plugs in a USB combo (keyboard and mouse) in one USB port, the user station will not detect the other USB port if anything is connected to the second USB port. This is the manner in which the user station was designed to function.
- Paragon I UMT2161 is not available in hardware version III, and therefore cannot be upgraded to release 4.3. As a result, it is not compatible with Paragon II CIMs.

Issues Fixed

#	Description
4710	Dual CIM: no mouse and/or keyboard
5481	Loss of Keyboard and/or mouse with video issues on P2-EUST
6557	Compatibility issue with UKVMPCD-X330 and UKVMPC-X330 CIMs fixed
8719	Servers connected to HubPac losing video
8722	Database coherency issue

System Upgrades

Paragon II Release 4.3 may be downloaded from the web at <http://www.raritan.com/support/firmwareupgrades/paragonII>.

For complete instructions on upgrading your Paragon II system to version 4.3, please refer to the instructions provided in chapter eight of the Paragon II User Guide, which may be downloaded at <http://www.raritan.com/support/productdocumentation>.